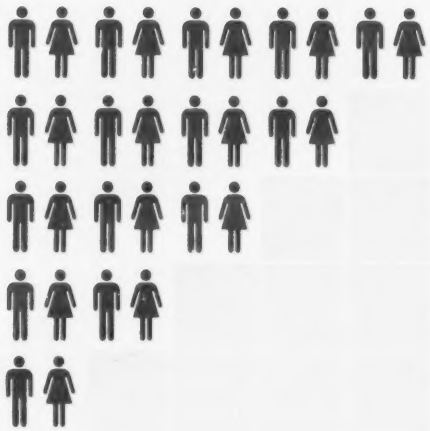
People and Productivity

A Challenge to Corporate America

A Study from
The New York Stock Exchange
Office of Economic Research



"The most valuable of all capital is that invested in human beings."

Alfred Marshall

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Preface

A year ago the business pages of *The New York Times* carried a striking article that applies directly to the subject of this study.[1] The article compared the level of productivity of two different automobile assembly plants. According to the *Times*, in the first plant it took twenty-one worker-hours to produce a car, while in the second it took forty—a gap in performance of almost two to one. In addition, the cars from the more productive plant had a lower reject rate. Most of us might guess that the better performing plant was more automated or that it used more advanced technological processes. But in fact, both plants are owned by Ford Motor Company, both turn out the same kind of car, and both have virtually identical capital equipment. The more productive plant is located in West Germany, the less productive in England. And the only way to account for the enormous difference in performance between one plant and the other is the vital factor of *people*.

This is the fifth in a series of New York Stock Exchange studies in which productivity—the amount a worker can produce in an hour—is the main subject.[2] Our earlier studies emphasized the "capital side" of productivity improvement. They examined what could be done to increase the rate of investment in new plant and equipment and to improve the technology embodied in that investment. By contrast, this fifth study is the first to focus on the "people side." It asks what we can do to boost productivity by better utilizing our people.

Underlying all our studies has been the assumption that rising living standards matter, that a better material life for our people is an essential part of a better quality of life. And from that standpoint, to borrow a phrase from a national pastime, productivity isn't everything, it's the only thing. The simple fact is that without a rise in output per worker-hour, there can be no sustained growth in income per person.

I have been asked by some how the New York Stock Exchange can presume to tackle the relatively elusive and intangible subject of people management. I can only answer that we can hardly presume not to. Concern with the need to boost productivity inevitably leads to examining all the factors that matter: And as this study shows, the role that people play matters greatly. Also, compared with the capital side of boosting productivity, the investment of time and money in better utilizing people is relatively small. In other words, we are talking about a potentially favorable ratio between payoff and effort.

This study includes the results of the first nationwide survey of human resource programs to boost productivity in U.S. corporations. One of the main findings of the survey is that companies are giving high marks to the set of approaches generally associated with "Quality-of-Work-Life" ("QWL"). What is QWL? Basically Quality-of-Work-Life programs encourage employees to participate in the key decisions that affect and determine day-to-day work patterns. Up to now, literature on the subject has reported a number of cases in which QWL programs have proved successful. I am happy to find from our survey that these cases are not isolated, but turn out to be representative of companies generally.

On a less positive note this study examines the role of our schools in affecting productivity—and it finds disturbing differences between the U.S. schools and those of Japan. How to improve our schools is a large subject that we don't presume to tackle. But we do focus on one relatively neglected aspect of what could be done: the role that the business community could play in helping the schools do their job more effectively.

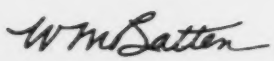
Other topics in this study include: a report on Japanese-owned businesses in the United States, based on research done for the New York Stock Exchange by Stanford University Professor Richard Tanner Pascale with assistance from Professor Mary Ann Maguire of Catholic University; and a report on financial incentive plans—which we call *gain sharing*—much of it drawn from research done for the New York Stock Exchange by Professor John Kendrick of George

1. Steven Rattner, "A Tale of Two Ford Plants," *The New York Times*, October 13, 1981, Section D, pp. 1, 4.
2. Our previous four studies are:
   Reaching a Higher Standard of Living, January, 1979.
   Building a Better Future, December, 1979.
   Productivity and Inflation, April, 1980.
   U.S. Economic Performance in a Global Perspective, February, 1981.

Washington University. As with our previous studies, the aim is both to interest the general reader and yet to satisfy the highest demands of scholarship.

This study was prepared by staff economists Eugene Epstein and Ira Gelb under the supervision of Dr. William C. Freund, Senior Vice President and Chief Economist. Staff economist Mel Colchamiro provided assistance as did research associates Norma Vallejo and Kenneth Fox. Edward Connors and William Case of NYSE's Survey Research Department conducted the survey. Eugene Epstein coordinated the overall project and served as principal writer of the final study. We appreciate the important contributions of Drs. Kendrick, Pascale, and Maguire. To Dr. Kendrick, who has contributed enormously to our previous studies, we owe a special acknowledgment for first pointing out the need for a broad-based survey of productivity improvement programs. The material on Japan benefited immeasurably from discussions with Dr. Thomas P. Rohlen, an anthropologist and "expert's expert" on Japanese society. Staff at the American Productivity Center in Houston, Texas, gave us vital help in drafting the questionnaire that was used in our survey. To a number of economists and specialists on Japan who were kind enough to review the manuscript, we already have expressed our appreciation privately. Finally, footnotes in this study acknowledge more specific debts to people whose knowledge and insights have become a part of our analysis.

The Exchange, of course, accepts full responsibility for the analysis and study conclusions and for any errors or omissions.



William M. Batten, Chairman
New York Stock Exchange, Inc.

November, 1982

Introduction

There are three main ways for people to increase their productivity. The first way is by acquiring *more capital*—say, an extra tractor or an extra computer. The second is by acquiring *better capital*—say, an improved tractor or computer. The third way is by "working smarter" with the capital they have. This study is about that third way: about the "human capital" side of boosting productivity in the workplace.

How important is the people factor in boosting productivity? That question is really two questions: First, how important *has* it been, and second, how important *can* it be? With regard to the first question, Professor John Kendrick estimates that better human capital has accounted for anywhere between one-fifth to one-half of total growth in productivity, depending on the decade being examined.[1]

With regard to the second question, our study shows that the potential for better management of people is enormous; accordingly, the potential is also there for this factor to make unprecedented contributions to a rise in productivity. To take one instance, we cite results showing an average rise in productivity of 20% over a single year among more than seventy companies that had instituted a particular human resource program.[2] When we explore the implications of that performance we come up with projections that almost defy belief. To begin with, assume that similar human resource programs were instituted in every American workplace and that the results showed the same increase over one year of 20%. That 20% would mean a growth in G.N.P. of 20%. To gain perspective on this number, note that from 1973 to the present, G.N.P. has grown by no more than 20%. In other words, from this factor alone G.N.P. would grow in one year at a rate that previously took nine. Even assuming that this 20% growth in productivity takes not one year but five would mean an annual rate of growth of almost 4%, or approximately the same rate as in the high-growth decade of the 1960s. And that assumes no contribution at all from the effects of more and better capital or from a growing labor force.

We begin this study by taking a look at Japan, the country that more than any other has been held up as a model for Americans to emulate. While we find that model somewhat tarnished, we also find that it provides us with some important, and even disturbing, lessons. In particular, much of the Japanese success in the workplace appears attributable to what happens before people get to the workplace: to the effectiveness of Japanese primary and secondary education and to the unique way the Japanese company trains and prepares its managers. Our discussion of the schools includes a painful look at the school system in the U.S.—and at some of the things that might be done if our schools are to provide people with the skills necessary to lead productive lives. In our discussion of how Japan prepares its managers we examine the tradeoffs that American companies must consider if they are to borrow from the Japanese example.

We conclude our section on Japan by considering the applicability of Japanese management methods to the U.S. It is one thing to talk about the success of Japanese management with Japanese workers; the real question is how Japanese management approaches apply to American workers. Accordingly, we take as a laboratory situation the management performance of Japanese-owned companies in the U.S. These companies are not only Japanese-owned, they are Japanese-managed—and their workforce is American. We find that a Japanese-run company with an American workforce does make for a corporate environment that is different from an American-run company with an American workforce—and that the nature of that environment is worth considering.

The second section of this study summarizes the findings of the first broad-based survey of human resource programs to boost productivity. There were two target populations of our survey: the approximately 49,000 corporations that have 100 employees or more (employing a total of approximately 41 million people) and the approximately 7,000 corporations with 500 employees or more (employing a total of approximately 35 million people). We wanted to find out how many corporations have programs, what kinds of programs these are, why these programs were introduced, how many employees are involved, and most important of all, what effect these programs have had on

1. Private interview. Professor Kendrick is an internationally recognized expert on this subject.
2. See Chapter 9, p. 35.

boosting productivity. The results are extremely encouraging, and they have important implications. The movement to boost productivity through human resource programs is still a minority movement, but through a better understanding of its successes, it may yet become a movement of the majority. The potential for boosting productivity growth through better management of people appears enormous.

Our study concludes with a discussion of *gain sharing*, the term we use to describe all forms of tying labor's income to productivity or profits rather than to a fixed wage. We consider the effect of gain sharing on worker motivation and examine the evidence regarding the effect of gain sharing on productivity. Fresh and strongly positive evidence on the subject is provided by our survey.

Finally, a word on the format of this study. Since the text is meant for the general reader, documentation is kept to the footnotes. In addition, there are long appendices which the general reader may skip, but which we hope satisfy the demands of the scholar.

Section 1

A Tale of Two Countries: What the U.S. Can Learn from Japan

"Few things are harder to put up with than the annoyance of a good example."

Mark Twain

1 The Effects of Discrimination: Some Things We Shouldn't Learn

"In an era when Japanese expertise is all the rage...now it's Musashi with a vengeance."

Quote appearing on the back of a best-selling paperback by Miyamoto Musashi, a seventeenth century Japanese samurai warrior.[1]

A New Faith

Is there anything we can learn from Japan about people and productivity?

The past few years have produced enough print about that question to fill a library. Conferences and college courses on Japanese management amount to a minor industry. There are even indications that our interest in the subject is degenerating into a new faith. For instance, consider the extraordinary popularity of a paperback entitled *The Book of Five Rings: The Real Art of Japanese Management*. Instead of living up to its subtitle, the book turns out to be a text on fighting by a Japanese samurai warrior who lived in the seventeenth century. Some of its sections bear the following titles, all of them meant literally: "To Stab at the Face," "To Stab the Heart," "The 'Slapping Away' Parry," and "The Order of Opponents When Fighting Alone."[2] At a conference on Japanese management held in New York City, a professor from a prestigious business school read passages from this book to an audience of corporate managers. One passage he read was as follows: "When you want to see, see right at once. When you begin to think, you miss the point."[3] The sorry spectacle of a business school professor telling American managers not to think can only make one wonder whether America's fascination with Japan will become yet another reason for the decline in our productivity growth.[4]

It may be partly a response to these excesses that a backlash has set in. A host of critics are now beginning to tell us, partly with good reason, that not all is so well with Japan's way of doing things.[5] The viewpoint we will defend here is that much *can* be learned from Japan regarding people and productivity. But let us first acknowledge those aspects of the Japanese example that Americans had best leave unlearned.

Discrimination and Productivity

Item: By American standards Japanese society practices discrimination against women. For instance, although women can rise in the professions, it is difficult for them to get high paying managerial jobs with corporations. On the nonmanagerial level, companies that offer lifetime employment usually offer it only to men; women who are accorded this status must agree never to leave for marriage or motherhood. In general, then, companies view women as temporary help and will lay them off in bad times. The inferior status of women workers helps create a pattern frequently observed by visitors to Japan: In service industries, three women may be employed at a job that one could perform. Since women's promotional opportunities are extremely limited, they can be paid relatively little. And because of these low wages, a business can employ a surplus of female labor at relatively low cost. In a nondiscriminatory work environment, this inefficient use of labor probably would prove too costly.[6]

Item: Japan has a Korean minority numbering almost one half of one percent of the total population. They are mostly second and third generation and are assimilated in language and education. But they are largely denied citizenship and are shut out of most good job opportunities.[7]

Item: The Japanese economy offers young people virtually no "second chance." A young person who does badly in high school will be permanently barred from high level jobs. His fate is sealed because access to good jobs comes only from attending a good university—which in turn comes only from doing well on entrance exams. So the indiscretions of youth can be the handicap of a lifetime.[8]

1. Miyamoto Musashi, *The Book of Five Rings* (New York: Bantam Books, 1982).
2. Ibid., pp. 47-50.
3. Ibid., p. xxii.
4. Witnessed by a New York Stock Exchange economist who attended this conference.
5. See, for example, B. Bruce Briggs, "The Dangerous Folly Called Theory Z," *Fortune*, May 17, 1982.
6. For further discussion, see "The Status of Women in Japanese Society," Appendix 1, p. 42.
7. See Richard H. Mitchell, *The Korean Minority in Japan* (Berkeley: University of California Press, 1967).
8. Dr. Thomas P. Rohlen, "Japanese Education and Society," ms., p. 23.

Item: "Core" companies—the Japanese counterpart of the Fortune 500—do not permit lateral job hopping. If you are unhappy working for Company A, there is no chance of getting a job with Company B. Unhappy or not, you are stuck for life—unless you are willing to take a job with a company on the periphery.[9]

Item: The core companies impose mandatory retirement on non-managerial workers who are fifty-five to sixty years old, even though most of them are quite able to continue working. What many of these people do in order to support themselves is get lower paying jobs with companies on the periphery.[10]

All of these items are forms of discrimination. Some of them violate our sense of fair play, others our sense of justice. And in fact, most of them would violate our laws.[11] But what also can be said about them is that they detract from overall productivity. When employers practice discrimination, they deny themselves and society full access to the productive potential of the workforce. Talented women, talented Koreans, talented people whose only drawback is that they performed poorly in high school, all are being underutilized in relation to their talents. A similar point applies to people over fifty-five who could remain productive at their jobs if they were allowed to retain them and to people who could be more productive at another company if they were allowed to move.

To say the least, Americans have no cause for self-righteousness when it comes to another country's discriminatory practices. But what does appear to distinguish us from Japan is our greater public awareness that these evils exist and our very real efforts to reform them. In that regard, the Japanese may have something to learn from us.

The Japanese College: A Four Year Vacation

Another lesson to leave unlearned from the Japanese applies to their system of higher education. In the next chapter we will be taking note of the extraordinary effectiveness of their primary and secondary schools, but their colleges are another matter altogether. Over 40% of high school graduates attend some kind of college.[12] For the vast majority of them, the first two years amount to an extended vacation; for most of those who are planning on business as a career, the vacation lasts all four years. On being asked by a New York Stock Exchange interviewer whether his college experience had been demanding, a young Japanese economist who had attended an elite university flashed a grin and described it as a "paradise." He added that he had not heard of anybody ever being expelled from college for academic reasons; students were expelled only for being in trouble with the police.[13]

From an American perspective, there is something ironic about the school experience of a Japanese young man planning on a managerial career in business. After putting up an extraordinary effort to distinguish himself in primary and secondary school, he wins acceptance to a good university. Nothing further is expected of him until he applies for a corporate job. Graduating from an elite college is all he needs to be considered for a position with a good company; his academic performance while attending that college matters not at all. Since companies do not expect their applicants to have degrees beyond undergraduate school, recruiting happens in a young man's senior year.

While some might theorize that this four-year interregnum is a good way to provide young people with an opportunity to unwind from the responsibilities behind them and the responsibilities to come, the rest of us might wonder why the process has to go on for so long. Companies actually know full well that most of their college-educated entrants have grown soft from four years of easy living; the training program they put them through once they are hired is partly aimed at toughening them up. While it is unlikely that young people are harmed in any long-lasting way by their college experience, there still must be better ways for them to spend their time.[14]

But if Japanese society is flawed in ways that detract from its productivity, there are also many things that it does right. Indeed, the things that it does right have to be all that much more effective in order to compensate for what it does wrong. The next three chapters will deal with those things that we *can* learn from Japan about people and productivity.

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9. Ibid., pp. 17-18, plus interviews with Dr. Rohlen. This rigidity also has its positive side; see Chapter 3, p. 15.
10. Based on interviews with Dr. Rohlen. For further discussion, see "The Economics of Japan's Seniority System," Appendix 1, p. 42.
11. We are indebted to Isaac Shapiro, a partner in the New York-based law firm of Milbank, Tweed, Hadley & McCloy, for making this point.
12. Rohlen, "Japanese Education," p. 8.
13. Based on an interview with Japanese economist Yoshiaki Taguchi (3/18/82).
14. Based on interviews with Dr. Rohlen. See also Edwin O. Reischauer, *The Japanese* (Cambridge, Mass.: Harvard University Press, 1977). Reischauer writes: "That Japan continues to operate as well as it does despite the problems of higher education seems at first surprising but probably is to be explained by the excellence of pre-university education and the system of advanced in-service training for new employees in business and government" (p. 178).

2 Preparing People for Work I: Schooling

"Education is the cheap defense of nations."
Edmund Burke

What happens in the workplace is significantly determined by the preparation and training for work that people receive before they get to the workplace. Among the lessons we can learn from Japan about people and productivity, this relatively neglected area may be the most important. But since we also must understand how these lessons can be applied, this chapter and the next two will say as much about the U.S. as they do about Japan.

The Importance of Schooling in Japan

We recently put the following question to an expert on Japan: "If you had to pick the one factor that is responsible for the extraordinarily high productivity of the Japanese people, what would that factor be?" He answered unhesitatingly: the high quality of Japanese primary and secondary education.[1]

Education? Not quality circles, the art of Japanese management, the practice of "Theory Z," or the partnership between government and business? No, he insisted, whatever those factors may contribute, the key factor is the schools. He pointed out that a similar view is held by no less an authority than Harvard University Professor Edwin O. Reischauer, former Ambassador to Japan and author of numerous books about that country. Reischauer writes in his most recent book, *The Japanese*, that "Nothing, in fact, is more central in Japanese society or more basic to Japan's success than is its educational system."[2]

Whether it is correct to say that the Japanese schools are the key to their productivity performance, few can doubt that the schools play an important role. For instance, consider the fact that during Japan's postwar economic miracle there was a concomitant revolution going on in the schooling of its people. After the war the Japanese government vigorously pursued the goal of a universal high school education.[3] In 1950, 43% of all fifteen year olds were going on to high school; this figure increased steadily until it surpassed 90% by 1975 and 95% by 1980. Over the same period, among younger age groups, enrollment in nursery school and kindergarten increased from a small minority to the overwhelming majority of all four and five year olds. The addition of the first two years of schooling is significant, since it is there that Japanese children learn how to read. Japanese born from 1910 to 1945 tested at an average I.Q. of 102-105, while subsequent tests showed an average of 108-115 among Japanese born from 1946 to 1969.[4] At least some of this significant increase in mental ability must be attributable to the increase in the general level of education—and that, in turn, must partially explain the extraordinary growth in productivity over this same period.

Intercountry comparisons provide further evidence of the connection between education and productivity in Japan: With one of the highest rates of productivity growth in the world, the Japanese people are among the best educated. For instance, compare Japan with the U.S., where productivity growth has been much lower. Approximately 95% of Japanese teenagers now graduate from high school compared with approximately 74% in the U.S.[5] Japan's schools are in session five and a half days a week, with more weeks to the school year than U.S. schools. The result is that a graduate of a Japanese high school has the equivalent of approximately four more full years of schooling than a U.S. high school graduate. International surveys of educational achievement show that in both math and science, the mean scores of schoolchildren in Japan are higher than in any other country, and far higher than in the U.S. Also, among Japanese the degree of variability around the mean is one of the lowest—which testifies to the

1. Based on an interview with Isaac Shapiro, a New York lawyer who was born in Tokyo in 1931 and grew up in Japan through the war years and the first year of the American occupation. He has written extensively about his native country and was, for a number of years, President of the Japan Society in New York.
2. Edwin O. Reischauer, *The Japanese* (Cambridge, Mass.: Harvard University Press, 1977), p. 167.
3. This material on the Japanese school system is drawn from *Japan's High Schools* (Berkeley, Calif.: University of California Press, forthcoming in 1983), and "Japanese Education and Society," ms., both by Dr. Thomas P. Rohlen; Ronald S. Anderson, *Education in Japan: A Century of Modern Development* (Washington, D.C.: U.S. Government Printing Office, 1975), and William K. Cummings, *Education and Equality in Japan* (Princeton, New Jersey: Princeton University Press, 1980); also drawn from interviews with Dr. Rohlen.
4. Richard Lynn, "IQ in Japan and the United States shows a growing disparity," *Nature*, Vol. 297, May 20, 1982, pp. 222-223. For additional discussion, see "I.Q. and Education in Japan," Appendix 1, p. 42.
5. U.S. figure from a telephone interview (10/14/82) with Paul Houts of the Carnegie Foundation for the Advancement of Teaching.

fact that educational achievement in Japan is widespread. [6]

The success of the Japanese school system in reaching the broad masses of people is a recurrent theme among students of the subject. For instance, in his study of Japanese high schools, Dr. Thomas P. Rohlen writes:

The great accomplishment of Japanese primary and secondary education lies not in its creation of a brilliant elite,... but in its generation of such a high average level of capability. The profoundly impressive fact is that it is shaping a whole population, workers as well as managers, to a standard inconceivable in the United States, where we are still trying to implement high school graduate competency tests that measure only minimal reading and computing skills.[7]

U.S. Schools

As Dr. Rohlen implies, to discuss the performance of the U.S. and Japanese school systems in the same context is like attempting to compare two unlike objects. In the U.S. the role of the schools in affecting productivity may loom even larger than in Japan—but more as a brake than as an accelerator. The regrettable fact is that many of our people are poorly prepared even for the minimal requirements of the workplace.

To appreciate the magnitude of the problem, consider the recent findings of the National Assessment of Educational Progress, which surveyed the knowledge and skills of high school students. The survey showed that: 13% could not perform reading tasks designated as "functional"; 28% could not answer questions testing "literal comprehension" of what they read; almost 10% could not write prose deemed marginally acceptable. The results were much worse with regard to anything beyond basic skills. For instance, 53% could not write a letter correcting a billing error, and 43% could not handle even the simplest problems involving applied math. Bear in mind that these results were restricted to high school students. Had the survey included the approximately 26% of young people who drop out of school, then the proportion of those performing poorly undoubtedly would have been much higher.[8]

In case there is any doubt about the validity of these findings, consider the results of the recent Adult Performance Level Study, conducted by the University of Texas. Based on a representative sample of the U.S. population, the study found that approximately one in five adults is unable to handle such tasks as completing an employment application, balancing a checkbook, interpreting a calorie chart, properly addressing an envelope, and applying for a loan. On that basis the study concludes that one-fifth of U.S. adults are "functionally incompetent."[9]

The Need for Action

The Japanese example reminds us that a productive society requires an educated workforce. It also reminds us of some of the things we need to restore the effectiveness of our schools: a return to basics, persistent standards applied to the teaching of those basics, and a strong community consensus supporting those standards. Some have blamed the shortcomings of our schools on the supposed shortcomings of our young people. If that viewpoint is valid, then we must conclude that nothing can be done until our young people change. To those who persist in this belief we recommend the words of the noted psychologist and social critic Dr. Kenneth Clark:

I went to school in Harlem and I remember my teachers in Junior High School 139. I knew Miss McGuire insisted that I respect the structure of a sentence and she explained to me what a sentence was. Those teachers had standards that we knew we had to meet. Why is it that that could be done in the late 1920s and the early 1930s and not in the 1970s and 1980s. Why?

All of them—Mr. Deegan, Miss McGuire, Miss Smith, and Mr. Mitchell—never asked whether I came from a broken home. They weren't social workers; they were teachers.[10]

In effect, Dr. Clark is telling us there is no excuse for inaction.

All that must be done to reform the schools—and what further we might learn from the example of others, including the Japanese—is a subject that is well beyond the scope of this

6. For data, see "Math and Science Mean Scores," Appendix 1, p. 42.
7. Thomas P. Rohlen, "Japan's High Schools," ms., p. 23 of final chapter. The success of the Japanese school system in reaching the broad masses of people is the main thesis in Cummings, *Education and Equality*.
8. Based on a telephone interview with a researcher from the National Assessment for Educational Progress, Denver, Colorado (5/12/82). For a full discussion see Charles J. Gadway, *Functional Literacy: Basic Reading Performance (Washington, D.C.: The National Right to Read Effort, 1976) and Foy H. Forbes and Lynn Grover Gisi, Information Society: Will Our High School Graduates Be Ready?* (Denver, Colorado: Education Commission of the States, March, 1982).
9. *Final Report: The Adult Performance Level Study* (University of Texas at Austin: The Adult Performance Level Project, March, 1975).
10. Quoted in Gene I. Maeroff, *Don't Blame the Kids: The Trouble with America's Public Schools* (New York: McGraw-Hill, 1982), p. 83.

study. What we want to focus on here is one relatively neglected aspect of this issue: the role that businesspeople could play.

What Business Can Do

Even in more normal times, there is a strong case to be made for a deepened business involvement in our schools. If the first purpose of our schools is to create good citizens, the second is to create productive people. Business ought to do all it reasonably can to help our schools fulfill that second purpose even if productivity growth were soaring and our classrooms were models of effectiveness. Indeed, the more effective our schools become, the more they can benefit from business involvement—and the more the schools can contribute to a productive and prosperous workforce.

Given the circumstances we face now, the need for business involvement in our schools has become particularly acute. And in fact, some measures are being taken already. More than new ideas, we need stepped up business involvement in those approaches that already have proven to be viable. Here are some of the possibilities.

More businesses might get involved in "adopt-a-school" programs. Say that a corporation decides to adopt a school in its local area. Such a relationship would involve responding to the school's particular needs. Does the school have many students whose math skills are poor and who could benefit from one-to-one tutoring? Staff of the corporation could get training in math tutoring and provide it to those students who need it. Are there special curriculum materials required for students who have reading problems? The corporation might provide the funds to purchase those materials. Would the school benefit from offering a course in word processing or from the use of computers as teaching devices? The corporation might provide the school with the use of that equipment.

What incentives would a corporation have to become so involved with a school? We can think of several. To begin with, the involvement could be a part of a company's recruitment process: Students who are helped by the company might eventually become its employees. In that way the company would get the direct benefit of a better skilled labor force. Second, there is the favorable publicity that results from being associated with activities of this sort. And finally, there is the boost to staff morale that results from such deep involvement in the activities of the community, particularly if staff of the company have children attending the school that is receiving this support. In fact, adopting a school is nothing new. In Los Angeles, for example, there is an "adopt-a-school" program with 105 businesses currently participating. As part of the program, the Los Angeles office of the Prudential Insurance Company sends fifty of its employees to a local elementary school to tutor students once a week.[11] More companies and more localities should be involved in such activities.

More businesses might open their doors to work study programs with nearby high schools and colleges. Young people who want to be auto mechanics, word processors, computer programmers, retail buyers, and office managers could spend a good part of their school time learning these trades on the job. What we are talking about, in other words, is a revival of the apprenticeship system, which was based on the sound premise that many tasks are better learned on the job. The agreement between master and apprentice was one of mutual benefit: The apprentice received training, and the master received the services of an assistant. In this case, businesses and schools could work out similar arrangements. Such programs could go a long way toward boosting the functional competence of young people.

Business could be directly involved with curriculum development of career education programs, from the elementary school to the college level. Businesspeople could work with curriculum planners to clarify the skills required in the whole range of jobs available in the business sector. Career-education programs also could include businesspeople visiting classrooms and students visiting businesses. Then career training could play a more important role in aiding intelligent career choices.

Businesspeople could meet regularly with educators to provide ideas and information that could increase the effectiveness of the schools. For instance, what will be the needs of the job market in the next decade? What is it about the education of young employees that could be strengthened? What kinds of adult education programs might the school develop that could supplement the skills of older workers?

If these and other ideas are to have a chance of being adopted, there must first be an effort to raise business' awareness about their stake in

11. Based on a telephone interview (8/82) with Ted Falk of the Prudential Insurance Company of America, Western Home Office.

the problems the schools face. We must understand that schooling is a long-term investment in human capital, and that productivity suffers when that investment is neglected. The disturbing fact is that even if we were to reverse that neglect tomorrow, we may spend years before we overcome its legacy. The time to begin is now.

3 Preparing People for Work II: Training Managers[1]

"The larger a company becomes, the faster it gets taken over by the accountants, the lawyers, and the bottom-liners who live in a world of reports, charts, graphs, projections, and chalk talks."

William Attwood, former president of Newsday

Japan's way of schooling its people resembles our own in many respects; but their way of training their corporate managers is almost completely different. In fact, even if their way were far better, we would not be able to adopt it completely. But some elements of what the Japanese do are worth considering.

Front-Lines Experience

Imagine General Motors hiring M.B.A.'s from elite schools and then requiring that they spend their first year working on the assembly line. Preposterous? Maybe—but something almost exactly like it is the custom at one of G.M.'s chief competitors, Honda Motors of Japan. Honda requires a full year of factory work from its newly hired university graduates. The managers-to-be are dispersed throughout the factory floor and report to the first level supervisors. In that way, their first experience of the company is no different from that of any other entry level person's. Nor is Honda unique in this practice. In one way or another most large Japanese companies require a kind of front lines experience from their managers-in-training.

The main purpose of front-lines experience is to help instill in the manager an understanding of both the basic processes of his company and the people who are an inseparable part of those processes. The nature of the experience a newcomer gets depends on how his company defines the front lines. Banks often require that people put in time as tellers. Matsushita Electric Company, which has retail stores all over Japan selling its products, requires that its incoming college graduates work in these stores as salesmen for several months. One extreme example is a well-known furniture manufacturer that requires managers to spend three years calling on purchasing departments of prospective customers. There are graduates from elite universities who fail miserably in this endeavor. Good at their studies, they turn out to be not so good at making cold calls. But even if they are destined to work in the company's accounting department—where poor salesmanship is presumably no great drawback—they are not let off the hook. They are told that they must spend more time in sales until they find the personal capacity to do it right. Since there is nowhere else to go—you don't switch companies in Japan—they have no choice but to keep trying.

Belief in the benefits of front-lines experience extends to the government as well. For instance, Japan's Ministry of Agriculture and Fishery imposes a special requirement on trainees who have passed the qualifying exams to become ranking officials. The young officials-to-be must spend one month in the hinterland living with and working for a farmer or fisherman.[2]

A Long Apprenticeship

Front-lines experience must be viewed in the context of the whole approach the Japanese company takes to training its managers. The Japanese company generally hires young men right out of college who have had little or no classroom training that directly prepares them for their vocation. In the company's view, they have had little that equips them to work cooperatively with people. The route that leads from high school to business generally looks like this: First, a high school senior must do well enough on difficult college entrance exams to gain admission to a prestigious university. Then follow four years of college during which he may never take a business-related course and where very little is expected of him in any case. In his senior year he takes written aptitude tests given by the well-established companies that he would like to work for. These tests are rudimentary and are given only to eliminate the more inadequate candidates; no one who was able to score high on the much tougher university entrance exams could fail to do well on them. After passing these tests, he is granted job interviews. Since a company will be making a decision to employ an applicant for life, the

1. Most of the information in this chapter is based on interviews with Dr. Thomas P. Rohlen.
2. Based on correspondence from Japanese economist Yoshiaki Taguchi (July 26, 1982).

personality he projects at these interviews is the primary determinant of whether he will be hired.

Once an applicant gets a job, his real training begins. Whatever he may have lost from four undemanding years in college, he very quickly regains. To begin with, the company fills the role of business school, in most cases by providing on the job training, but often through the literal equivalent of school. For instance, Dr. Rohlen writes of the "Uedagin" bank that maintains a separate training institute with seven full-time staff members; one third of the personnel of the bank receive some training at the institute every year. [3] To take another example, Sony is well-known for being a university unto itself, with extensive programs in languages, finance, science and engineering.

But in addition to technical training, Japanese companies also emphasize training in the intangible: in knowledge of oneself, knowledge of one's organization, and in the skills required to work with other people. Front lines experience is an important part of this training; in addition, many companies require a kind of "boot camp" experience as well. This generally consists of a period of several weeks in which young recruits are brought together to experience group living, formal instruction, and a series of unique ordeals aimed at building their character. In his book on the "Uedagin" bank, Dr. Rohlen vividly describes what the bank's boot camp is like. On the first day the young men are told the following: "In the public schools, all you had to do was study for examinations. Whether you got along with your fellow classmates or not was not very important. Here, we have cooperative living as our style of life." [4] The ordeals the young men are put through include an endurance walk of twenty-five miles and a unique experience called *rotō* (a word for which the best translation is "bewilderment"). In this case each individual trainee has to go from house to house in a nearby town and offer to work without pay; he is to do whatever his host asks of him and is forbidden to explain who he is or why he is there. Dr. Rohlen draws the following conclusions about this experience:

In the course of begging for work, that is, begging for acceptance by others, the subject learns of the superficial nature of much in his daily life. It is expected that his reliance on affiliations, titles, ranks and a circle of those close to him will be revealed, and, perhaps for the first time, he will begin to ask who he really is. Rotō also provides a unique opportunity for a trusting and compassionate interaction between strangers. After a rotō experience, it is unlikely that the person will continue to disregard the humanity of others, no matter how strange they are to him in terms of social relationship. [5]

Training in the intangible continues well beyond this early period. In the Japanese company, there is no such thing as the fast track. A young man will generally spend years in a series of relatively low level jobs before he can begin to assume managerial responsibility. This teaches him technical skills, but it also provides him with a deeply felt knowledge of the people of his organization.

In a previous chapter we faulted the Japanese system for preventing people from switching employers. Here we should note what some perceive to be an important benefit arising from that rigidity: Companies find it cost-effective to make enormous investments in training their managers, since they can plan on reaping the full payoff from their investment.

Applicability

In the U.S., the system is very different. No graduate of an elite business school would spend a year working on any company's factory floor, even for the starting salary that such graduates are used to getting; and few American companies could afford to take the other side of the bargain. Few companies are likely to spend years preparing people for managerial responsibility only to find that some executive recruiter woos them away to a competitor. Compared with the Japanese, our managers get far more business training in the classrooms—and less of it on the job. In general, they serve a much shorter apprenticeship before assuming executive positions. They may be better trained in corporate strategy than their Japanese counterparts, but it is probably fair to say that they are not so well trained in the human knowledge of the organizations they run.

Does this put American companies at a disadvantage? There is no way to prove that it does. And in any case, it would not be cost effective for most American companies to fully replicate the Japanese approach.

3. Thomas P. Rohlen, *For Harmony and Strength: Japanese White-Collar Organization in Anthropological Perspective* (Berkeley, Calif.: University of California Press, 1974), p. 194. "Uedagin" is the pseudonymous name of a bank that is approximately the thirtieth largest in Japan. Dr. Rohlen worked there as a participant-observer for a year during 1968-69. *For Harmony and Strength* is based on that experience.
4. Ibid., p. 201.
5. Ibid., pp. 204-205.

Nonetheless, any company that wants to rethink its policies in this area might consider the Japanese example. There are always tradeoffs in deciding what people to hire, what people to promote, and what attributes to encourage among managers. A company that required some front-lines experience from its M.B.A.'s might find that some of those from elite schools are declining to apply; if it required a longer apprenticeship from its managers in training, it might find that some are quitting in disgust before the apprenticeship is through. But it might also find that through such policies it is creating a core of managers who have a marrow-deep knowledge of the organization and how it works and that the benefits of this achievement exceed the costs.

4 East Meets West: Japanese-Owned Businesses in the U.S.

"I'll hate to see him go back to Japan. He always thanks you for anything extra you do. He's probably the best boss I've ever had."

Statement of an American worker in a Japanese-owned plant about his supervisor, 1982.

So far in this discussion of Japan we have focused on the Japanese way of preparing people for the workplace. Now we turn to the issue that has gotten by far the most attention in this country—the practices of Japanese management.

In this case we take a novel approach. When the best-selling book *The Art of Japanese Management* was reviewed in *The New York Times*, the reviewer commented that "it would not be easy for Americans to adopt the Japanese model, much of which arises out of its country's culture."[1] Accordingly, we have commissioned one of the coauthors of that book, Stanford Business School Professor Richard Tanner Pascale, to address that issue.[2] Professor Pascale closely examined a group of companies whose top management is Japanese and whose workforce is American: U.S.-based subsidiaries of Japanese corporations. In all the cases that Pascale looked at, the Japanese have chosen not to be absentee owners; rather, they have brought over their own nationals to run things according to their lights. How have these missionaries fared with the natives? The answer to that question should tell us a great deal about how easy or hard it is for Americans to adopt the Japanese model.

Findings

We can summarize Prof. Pascale's conclusions as follows:

- A Japanese-run company with an American workforce does indeed make for a corporate environment that is different in certain respects from an American-run company with an American workforce. In other words, the Japanese management model *is* operating on American soil, even though it is unquestionably different from Japanese management on Japanese soil.
- The Japanese subsidiaries are not more productive than American companies in a strict quantitative sense. However, the evidence shows that they pay more attention than American companies to product quality.

Method

Prof. Pascale closely examined a sample of thirteen Japanese firms in the United States. These firms represent ten different industries that include a broad range of activities: banking, retailing, food processing, transportation, bearings, fasteners, motorcycle assembly, electronics, aircraft manufacture, and automotive distribution. The choice therefore included both the service sector and the manufacturing sector as well as industries with both low and high technological content. In general, the parent companies in Japan are high performers in their fields; otherwise, they would be in no position to absorb the risk and expense of opening up American subsidiaries. All of these subsidiaries were headed by a Japanese national, all had Japanese nationals in two or three key positions, and on the average, Japanese nationals represented about a quarter of those employed in management, with these heavily concentrated in staff positions. On the other hand, the workforce was American, as were the overwhelming majority of line managers.

Pascale compared these thirteen Japanese companies with American companies that were similar in major respects. That is, in each case, he carefully matched the Japanese subsidiary with an American counterpart. The matching criteria included kind of product, type of technology, size and composition of workforce, and geographical location. Some of the companies in Pascale's sample matched with their American counterparts were: Sony and Zenith, Japan Airlines and United Airlines, Toyota auto distributors and Ford auto distributors, Shirokiya department stores and J.C. Penney, Kawasaki and Harley Davidson,

1. *The New York Times Book Review*, February 28, 1982, p. 35.
2. This chapter is based primarily on "Japanese Management Practices in the United States," a background paper prepared especially for the New York Stock Exchange by Professor Pascale and Professor Mary Ann Maguire of Catholic University. The paper updated research into this subject done in the mid-1970s by Profs. Pascale and Maguire. All quotes in this chapter are from that paper unless otherwise indicated. In the text of this chapter we cite Pascale as sole analyst for the sake of brevity.

Mitsubishi Aircraft and Aerocommander, YKK and Talon.

To ensure confidentiality to the study participants, our discussion will include few references to particular companies. Rather, it will report general conclusions about Japanese-run companies vs. those that are American-run. Note that the statements to follow will not apply to *all* Japanese-run companies or *all* American-run companies, but rather will apply to them on balance.

A Better Place to Work

With the help of survey questionnaires as well as open ended interviews, Pascale found a number of differences in management style between the Japanese-owned companies and their American counterparts. The differences add up to one overall impression: An American who knew these facts would probably choose to work for a Japanese-managed firm rather than a firm managed by other Americans.

Consulting with Subordinates Pascale found that slightly more middle level managers in the Japanese firms reported that their immediate superior consulted with them on nonroutine decisions (76% in the Japanese case vs. 71% in the American case). But what is significant is the nature of the consultations. The respondents were asked to distinguish between being asked for "factual input" vs. being asked for "their opinions and recommendations."

Of the two options [Pascale writes], managers in American firms were more likely to describe their superiors as getting only factual information from subordinates; managers in Japanese firms were more likely to say that their superiors consult with subordinates for opinions and recommendations. This subtlety of consulting more fully with subordinates is probably the most significant distinction between Japanese and American decision making.[3]

Job Security The findings also showed that the Japanese firms placed greater emphasis on job security than did the American firms. None of these firms offered the lifetime employment that is available at the parent company in Japan, but the record shows serious and largely effective efforts to avoid layoffs. During the recession of 1974-75 only one of the Japanese-owned firms had laid off any employees, whereas seven of the American companies had done so. In terms of number of employees, this meant that the Japanese laid off 2.8% of their workforce during the early period, compared with 11.8% for American companies. Pascale has no data for the American companies during the 1982 slowdown; but for the Japanese companies his data again show that only one of the Japanese companies had laid anyone off.

Top managers in the Japanese-owned firms stressed the importance of job security. In a recent interview, the president and chief operating officer of Sony said about its American subsidiary that "We have not absolutely committed ourselves and said, 'we will never lay you off,' but we have communicated it psychologically."[4] Other Japanese firms recognize a similar commitment. For instance, a representative of one firm stated that "as a practical matter it is difficult to lay employees off" because to do so "would destroy the positive image Japanese firms have created up to now."[5]

Similarly, an executive of YKK has said, "We don't promise, but we announce we will endeavor not to lay employees off." He added:

If we face difficulty, we first proportionately reduce the wages of all employees from general manager down to lowest-paid employee, other than probationary workers. Only if we can't manage do we resort to a layoff.[6]

Pascale notes two other strategies Japanese companies use to avoid layoffs. One is job rotation—the shifting of workers from one job to another, a practice that helps create a workforce able to perform a variety of jobs. In the event of a cutback, the company may be able to reassign workers to vacancies in other parts of the company rather than lay these workers off. A second strategy is used in conjunction with job rotation: the practice of filling vacancies with temporary workers when a slowdown appears likely. If the slowdown occurs, the temporary workers are discharged and replaced by regular workers, who are shifted from other operations within the company.

Firing for Cause Another related point is that there was a lower rate of firings among the Japanese firms (a mean of 11.3% of the workforce for the Japanese firms over a one year period vs. a mean of 17.5% for the American firms). The explanation for this difference may lie in the way the companies

3. For data, see "Comparative Patterns of Decision Making in Japanese- and American-Managed Firms," Appendix 1, p. 43.
4. "How the Japanese Managed in the U.S.," *Fortune*, June 15, 1981, p. 98.
5. Japan External Trade Organization, "Japanese Manufacturing Operations in the United States," 1981, p. 45.
6. "How the Japanese Managed," *Fortune*, p. 102.

dealt with absenteeism. To a far greater extent than the American firms, the Japanese companies dealt with the problem by fact finding and counseling rather than by imposing penalties.[7] This different pattern indicates a greater willingness in the Japanese case to try to solve employee relations problems rather rather than allow situations to deteriorate until workers are fired.

Manager-Worker Relations More often than in the American firms, managers in the Japanese firms were directly involved in the productive process. Pascale notes that:

- "Japanese managers would . . . frequently pitch in to help get the job done."
- "Middle and especially top level managers . . . were more often found on the shop floor observing and/or conversing with line workers about their operations, machines, etc."
- "Japanese firms are . . . more likely to have 'open door' policies, where managers are accessible to employees at all levels of the hierarchy."

Pascale also notes that the Japanese firms spent almost three times as much as the American firms on company-sponsored social and recreational activities: "The Japanese view these parties, picnics, teams, and tournaments as opportunities to improve communication, dissolve the working frictions of organizational life and build trust."

Pascale also asked about levels of job satisfaction. Not surprisingly, he found that nonmanagers generally showed more satisfaction with their jobs at the Japanese firms than at the American firms. More often at the Japanese firms, they mentioned that the "company cared." As Pascale notes, "American employees in these firms refer positively to their working conditions, specifically noting job security, the concern of managers for their well-being and for the general state of affairs on the production floor."

Treatment of Women We began this review of Pascale's findings by saying that an American who knew these facts would probably prefer to work for a Japanese-managed company. But women who seek management positions may be an exception to that statement. In a previous chapter we mentioned that in Japan it is difficult for women to get corporate jobs in management. Similarly, Pascale found in the mid-1970s that women in Japanese-managed firms more often expressed reservations about their possibilities for advancement to middle management positions; and follow up interviews he conducted in 1982 revealed very few women in middle management.[8]

Japanese Thoughts on American Workers

So far we have stressed what American workers thought of the Japanese. But what about the other way around? Here Pascale notes the following:

- Japanese managers "agreed that in comparison to Japanese workers, Americans wanted a more precise definition of their job responsibilities and that . . . few would move beyond their respective job definitions." In this regard, Pascale points out that Japanese managers "prefer a less strict definition of responsibility" while Americans "prefer the clearer delineation of responsibilities and accountability that job descriptions provide."
- "Very few Japanese firms have attempted to start quality circles in their U.S. operations. Managers in most Japanese firms indicate that employees first need more socialization (i.e., better teamwork)."[9]
- Japanese managers voiced no criticism about the willingness of American workers to do their assigned jobs, but several expressed dissatisfaction with their knowledge of mathematics—an important issue in high technology industries.

An executive of YKK has said that one of his "most severe shocks" was seeing managers "in whom we had confidence" suddenly leaving to work for other companies. He added: "I don't know how lower-ranked employees can be motivated or imbued with a sense of company loyalty under such circumstances."[10]

Of course, anyone familiar with the difference between Japanese and American work cultures—or with our previous two chapters on preparation and training for work in Japan—would not be surprised by these observations. The Japanese are used to a more cohesive, more loyal, and better-educated workforce than they have found in the United States.

Quantity and Quality

So far, with the exception of the treatment of women, we have drawn a positive picture of Japanese-managed firms in relation to their U.S. counterparts. We do not want to

7. For data, see "Comparative Ways of Dealing with Absenteeism in Japanese- and American-Managed Firms," Appendix 1, p. 43.
8. Pascale's findings are comparatively mild. Two Japanese-owned companies not in his sample have been the targets of lawsuits by women employees charging discrimination.
9. For further discussion, see "Quality Circles Among Japanese-Managed Companies in the U.S.," Appendix 1, p. 43.
10. "How the Japanese Managed," *Fortune*, p. 98.

exaggerate that picture. As we pointed out, Pascale compared Japanese-managed firms that were highly successful with American-managed firms that also were highly successful. Accordingly, Pascale found many similarities as well.

But the differences exist. And the question is, what effect, if any, do they have on actual company performance?

Pascale's findings were mixed. First, with regard to productivity as measured quantitatively, the results were a standoff. In five of the ten industries studied—one service and four manufacturing—the Japanese companies were more productive. In the remaining five—two service and three manufacturing—the American companies were more productive. Pascale measured productivity as output per worker-hour by comparing similar operations performed in the Japanese and American companies."[11]

But with regard to product quality, Pascale's findings were quite different. He writes:

All firms, of course, need to attend to quality if they are to remain in business. What our observations and interviews lead us to conclude is that quality is assigned a higher priority in Japanese firms than in many, or perhaps most, American firms.

In fact, Pascale found that in six of the ten industries studied, the Japanese firms paid more attention to quality than their American counterparts. Only in one case did the American-owned firm pay more attention to quality.

Several American managers noted that American firms for which they are or have been employed have been willing to accept higher reject rates to obtain higher volume production, while some Japanese companies are very concerned about reject rates of even one or two percent. As a manager at one Japanese firm explained: "If our production lines turn out two million pieces a day and even one percent are defective, if one quarter of these rejects are not caught, we are sending out into the market five thousand defective pieces each day. Whether a company turns out two million small, inexpensive items or twenty thousand more costly items, defects erode the reputation of the product and the company."

Pascale infers an inverse connection between attention to quality and the incidence of what he calls "counterproductive" behavior among employees. As one would expect, he found generally greater incidence of this behavior in the American firms. His findings were based on surveying nonmanagerial employees in both the American and Japanese firms about the incidence of such behavior among "people on your level of this organization."

Five types of counterproductive behavior in American firms are of particular interest: (1) "not working as hard as possible," (2) "trying to get out of work," (3) "not letting on when short of work," (4) "just not caring about the job," and (5) "just not caring about the customer."

Attention to quality can, of course, have as much or more of an effect on a company's bottom line as attention to quantity.

Applicability to American-Owned Firms

What Japanese managers have brought to the United States is an attention to the nuances of decision making, to the job security of their employees, to worker well-being generally, and to product quality. Pascale asked some of the American-owned firms why they did not pick up on the positive attributes of their Japanese competitors. In some areas, especially the preoccupation with quality production, he found that American firms are beginning to catch on. In other areas, American managers cited unions as an obstacle; they also pointed out that a much smaller proportion of Japanese-owned companies have to deal with unions.

For instance, unions are generally opposed to job rotation, even though it permits greater job security; unions also have opposed allowing upper and middle management to be present on the production floor. This last practice is something that Japanese managers regard as central, both to keeping abreast of production difficulties and to maintaining good worker-management relations. It is noteworthy that one Japanese-owned company successfully negotiated with its employees' union a limited management presence on the shop floor. This case suggests that successful negotiations also may be possible regarding job rotation, once both parties accept job security as a goal.

In one sense it is legitimate to speak of the factors we have mentioned as amounting to a style of management that is Japanese. But in another sense the Japanese are simply reminding us of some of those attributes that make for good management, Japanese, American, or otherwise.

11. For further discussion, see "Pascale's Methodology in Measuring Productivity," Appendix 1, p. 43.

Section 2

Human Resource Programs for Productivity: Findings of an NYSE Survey

"People support that which they help create."

a survey respondent

5 About Our Survey

"punching in, catching hell, punching out": a workday in a steelmill.[1]

Background

A job that fosters a "punching in, catching hell, punching out" mentality is apt to be reflected in poor worker performance. That realization underlies a growing thrust in industrial relations which holds that management must take positive steps to create conditions that encourage workers to realize their full productive potential. It is reflected in the great interest in the more people-oriented Japanese approach to management.

Spurred by the slowdown in productivity growth, corporate managers are experimenting with an array of human resource programs which they hope will ultimately contribute to improved worker performance. The individual programs run the gamut of industrial relations activities--from recruitment, to work scheduling and organization, to compensation. They encompass the newer participative decision making and self-management approaches and other so-called Quality-of-Work-Life (QWL) programs, as well as more traditional approaches to human resource management.

While the QWL movement is much written and talked about, the scope of QWL programs is only fuzzily defined. At its core, QWL is the effort to encourage employees to participate in the key decisions that affect and determine day-to-day work patterns. It recognizes that the person who does the job is the person who knows the job best. And it seeks to draw upon the expertise and creativity of a better-educated workforce to help redesign and reorganize work in ways that meet employees', as well as employers' needs. The hoped for result is to maximize workers' contributions to the productivity of their companies.

In broadest terms, QWL covers not only participation in decision making, but more general efforts to stimulate workers by making their jobs more interesting, giving them more control over their own activities, and providing them with a more direct stake in their companies' fortunes. Many observers believe that QWL is a significant new development which has important implications for the future productivity of American industry; others are more skeptical. Despite the attention given to QWL in both the business press and professional journals and the claims made for its success, little is known about the extent of the movement or industry's overall experience with QWL and other human resource programs. Clearly, a void exists.

As an extension of our earlier work on national productivity, the Exchange undertook a survey to help fill this void. Because of the importance of people in improving our national productivity performance, information on human resource programs will be of interest to policy leaders as well as to corporate managers seeking information to help shape their own programs.

The NYSE Survey

Although our survey encompasses the range of corporate programs aimed at improving worker performance, a special effort was made to track worker participation and other facets of the QWL movement. Thus, our survey results not only provide a systematic look at the human side of the corporate productivity effort, they also offer the first comprehensive examination of the much discussed QWL movement.

Our findings are based on a sample of the approximately 49,000 U.S. corporations with one hundred or more employees. These corporations employ about 41 million people, 55% of all private nonagricultural employment.[2]

Because the corporations surveyed are the major focus of formal programs, our survey results provide a comprehensive picture of the total effort to boost productivity through human resource programs.

The material that follows profiles the extent to which corporations employ programs, the number of employees affected, and program characteristics. It also provides the reasons why programs were introduced, and corporate officials' evaluations of their effectiveness.

1. "Will the Slide Kill Quality Circles?" *Business Week*, January 11, 1982, pg. 108.
2. For a discussion of the survey methodology, see Appendix 2, p. 50.

6 Human Resource Programs

"Believe in the worth of the individual employee: their willingness to cooperate, their flexibility, their interest in looking at new assignments. Stress cooperation."

a survey respondent

Prevalence of Programs

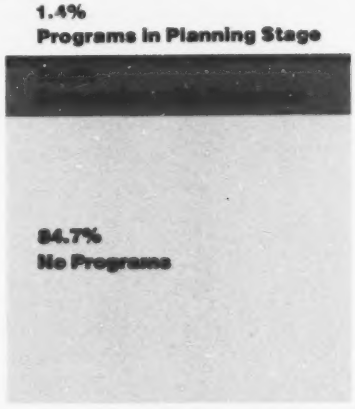
Our survey results portray a movement still in its developmental stage. Only a minority of corporations have human resource programs to stimulate productivity, and the bulk of activities included in these programs are less than five years old.

As defined in our study, the term "program" refers to the full scope of a corporation's effort to involve its employees. Each program may encompass several activities. For example, a program might include quality circles, formal training courses, job rotation and an incentive plan.

We estimate that only 14% (7,000) of the 49,000 corporations with one hundred or more employees have programs, shown in Chart 1.

Chart 1

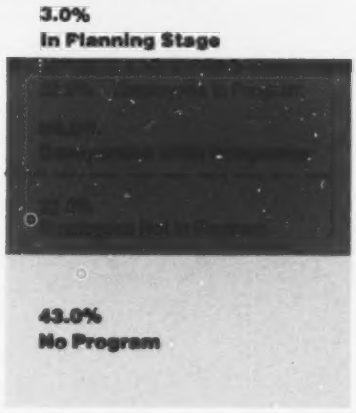
All Companies with 100 or More Employees



But, as might be expected, the larger the company the more likely it is to have a program. Thus, the 14% of companies that have programs account for 54% of corporate employees, as Chart 2 shows. Even in companies with programs, four of every ten employees do not participate.

Chart 2

Employment in Companies with 100 or More Employees



Based on our survey, we estimate that 32% of all employees in corporations with one hundred or more employees are involved in at least one program activity. Since all corporations in our survey universe employ about 41 million people, we estimate that about 13 million workers are included in human resource programs to improve productivity.

Chart 3 demonstrates the strong relationship between company size and involvement with formal human resource programs. For example, the proportion of NYSE-listed companies with programs (53%) is almost four times that of all U.S. corporations (14%), and 1.5 times that for corporations with 500 or more employees (33%). But even in NYSE listed corporations with programs, 43% of the workforce is not included—underscoring the tentative status of productivity-related human resource programs.

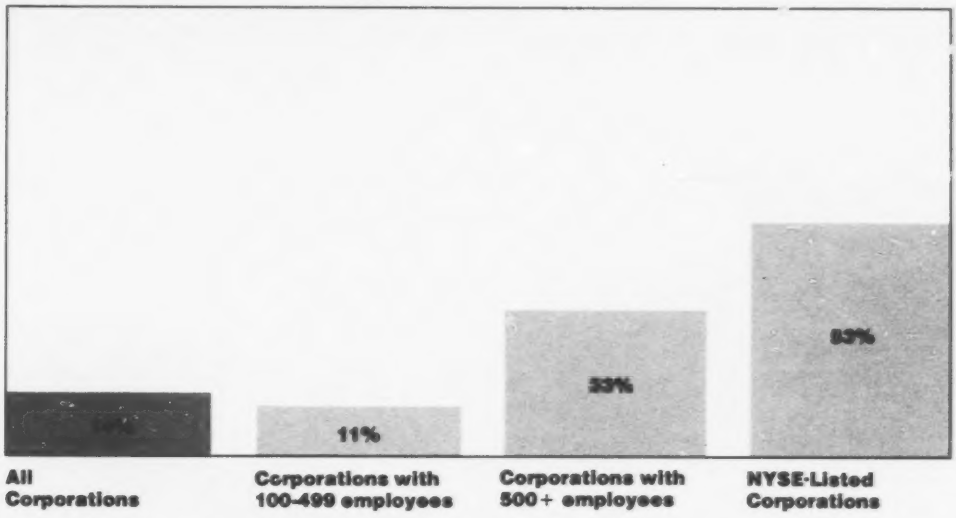
Why Programs Were Initiated[1]

Typically, corporations offer several reasons for initiating human resource programs. But, as would be expected, the driving force is the desire to improve competitiveness. Indeed, three-fifths of the corporations mentioned cost cutting, and two-fifths mentioned productivity improvement—the other side of the cost-

1 To maintain statistical reliability, the detailed findings covered in the remainder of this discussion are based on responses of corporations with 500 employees or more. These companies account for 93% of the employees covered by programs.

Chart 3

Percent of Corporations with Programs



Corporations with 100 or more employees

cutting coin—as prompting the initiation of their programs. Also no surprise was the importance attributed to poor morale and general complaints about the quality of work life—cited by half the corporations—as factors stimulating interest.

Table 1

Why Programs Were Initiated
(Corporations with 500 or more employees)

Reasons	Percent of All Corporations
Cut Costs	58%
Poor Employee Attitudes/Low Morale	46
Positive Reports from Other Corporations	40
Productivity Improvement	38
Change in Management Philosophy	36
Poor Product Quality	24
High Turnover	20
High Absenteeism	19
Poor Service	17
High Overtime	12
Lateness	10
Union Grievances	8

The most striking response, and perhaps the one of most fundamental significance, is the acknowledgment of a change in management philosophy, especially by the larger corporations. Over one-third of all corporations and one-half of corporations with 25,000 or more employees credited a shift in their basic approach to management as a factor in the decision to initiate new programs.

By and large, the change in philosophy reflects a shift in existing management's attitude toward human resource programs rather than a turnover in management itself. Only one in twenty of the corporations reporting a philosophical change attributed it to turnover in management.

The reported philosophical turnabout is undoubtedly linked to the favorable press received by QWL programs. Two-fifths of all respondents and three-fifths of the largest corporations gave "positive reports about other companies" as a reason for initiating their own programs.

A potential problem is that the avowed conversion to a new management philosophy may reflect the search for a quick fix for pressing problems rather than a genuine commitment to see a program through to its successful conclusion. It may be more than coincidence that higher proportions of large rather than small corporations mentioned both change in management philosophy and poor employee attitudes and low morale as reasons for initiating programs.

As one of the survey respondents noted: "Those [programs] will succeed which are tied to [the] basic company style. The gimmicky ones will fail." Another said: "Know your weak areas before you begin any program. Develop an atmosphere where change is accepted and even desired by your employees." Too many efforts are doomed from the start by the failure to adhere to this advice.

Types of Human Resource Activities

Typically, the range of activities encompassed by the human resource programs of large

companies is wider than the range for smaller companies—a finding that comes as no surprise. However, the differences in the number of activities moving up the size scale is narrower than one might expect. For example, corporations with over 25,000 employees and those with from 5,000 to 25,000 employees both averaged about ten activities per program. At the lower end of the scale, companies with from 500 to 1,000 employees averaged some eight activities, the same as programs of companies with 1,000 to 5,000 employees.[2]

Of the various types of activities covered by human resource programs, the ones most commonly engaged in are the more traditional personnel functions which relate directly to the individual employee's performance. This is underscored in Chart 4, which identifies the fifteen most common types of activities.

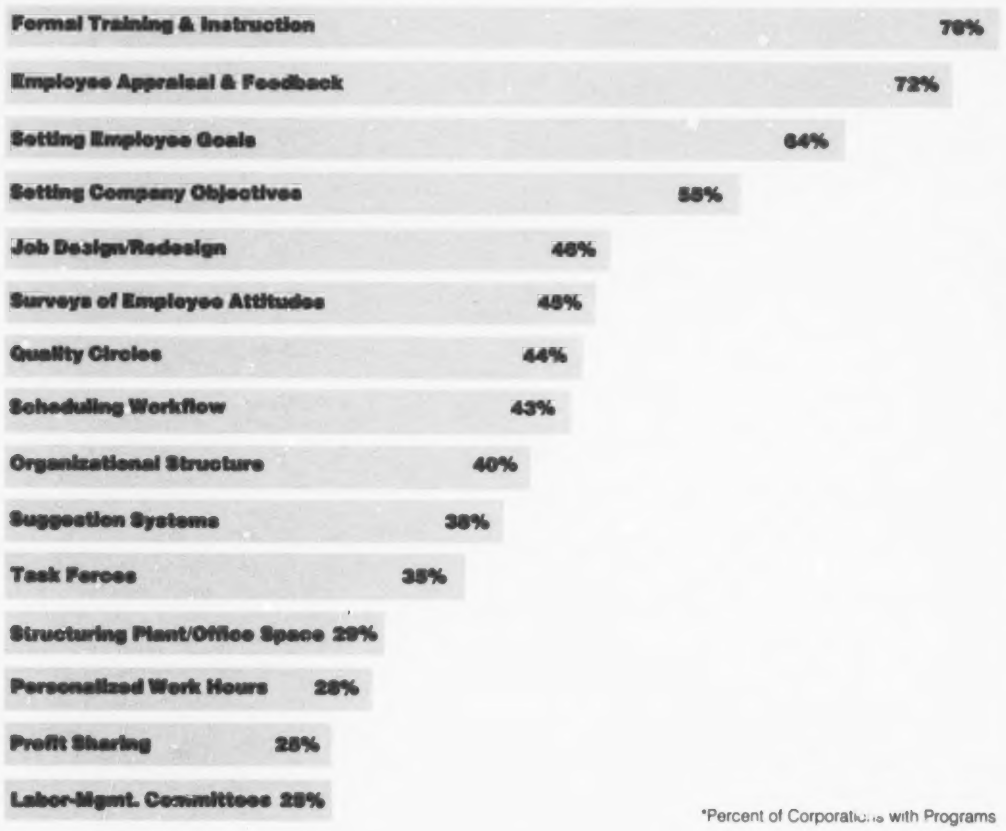
By far the most widespread human resource activities are formal training and instruction to help hone skills, the periodic appraisal of the individual employee's performance (included in three-fourths of the programs), and the setting of goals for the individual employee (included in two-thirds of the programs). These activities rank among the top three for all corporations, although among smaller ones, formal training is considerably less widespread than among larger. Only one other activity—involving employees in setting company objectives—is employed by more than half of all corporations.

In general, differences in participation in any type of activity are strongly related to company size. Those activities which are used far more extensively by large companies (5,000 and more employees) than by small companies include job enlargement, job rotation,

Chart 4

15 Most Common Human Resource Activities*[3]

(Corporations with 500 or more employees)



*Percent of Corporations with Programs

2 For a list of typical programs by size and other company characteristics, see Appendix 1, p. 44.

3 For a complete breakdown of activities by employment size and by manufacturing and nonmanufacturing corporations, see Appendix 1, p. 44.

production teams, task forces (ad hoc groups set up to tackle specific problems), suggestion systems, quality circles, and employee attitude surveys. For the latter two, disparities between small and large companies are particularly wide.

There tend to be only small differences in the pattern of human resource activities between similarly sized manufacturing and nonmanufacturing corporations. Three notable exceptions are quality circles, production teams, and labor-management committees. About 58% of the manufacturing firms with programs have quality circles, compared with 27% for nonmanufacturing companies; for production teams the ratios are manufacturing 23%, nonmanufacturing 9%; and for labor-management committees, they are manufacturing 34%, nonmanufacturing 14%.

The QWL Movement

The differences in participation between large and small companies are most pronounced for the newer types of activities associated with the Quality-of-Work-Life (QWL) movement. This is most vividly demonstrated in the case of quality circles—the organization of rank-and-file workers into small groups which meet regularly to analyze, discuss, and solve production-related problems—which have come to epitomize the QWL movement. About one in three companies in the 500-5,000 employee range include quality circles in their human resource programs, compared with two of every three companies with more than 5,000 employees. Three of every four manufacturing companies with 10,000 employees or more include quality circles in their programs.

That quality circles and other clearly identifiable QWL activities—particularly job rotation, job enlargement, and production teams—are associated with larger companies reflects the following:

- Smaller companies are more likely to have (or think they have) better informal lines of communication.
- Larger companies with better developed programs are in a better position to experiment with more novel activities.
- Larger companies are more likely to have concerns about poor employee attitudes and morale, as reflected in our survey results.

The recent growth in interest in QWL is reflected in the relatively high proportion of QWL-related activities that have been initiated within the past two years. Most notably, three of every four companies with quality circles have had them for less than two years; and four of every ten for under a year. Table 2 presents the six activities which have grown most rapidly over the past two years. All six are activities clearly associated with the QWL movement.

Table 2

Most Rapidly Growing Human Resource Activities Over the Past Two Years[4]
(Corporations with 500 or more employees)

	Percent of All Corporations Engaged in the Activity			
Activity	**Under 1 Year**	**1 to Under 2 Years**	**Total: Under 2 Years or Less**	**No Date Given**
Quality Circles	45%	29%	74%	10%
Structuring Plant, Office Space	22	28	50	23
Job Design/Redesign	17	19	36	34
Task Forces	22	10	32	31
Group Incentive Plans	13	17	30	14
Production Teams	8	21	29	25

While it is obvious from the data that QWL-related activities are attracting more interest, a count of activities alone cannot measure the extent to which QWL principles are being accepted by industry. To determine that, we asked corporations which of their human resource activities involved nonmanagement employees in decision making—this being the very essence of QWL.

We found that:

- 70% of corporations with 500 or more employees that have programs engage in at least one activity which involves some rank-and-file workers in decision making.
- Since one-third of corporations with 500 or more employees have programs, we estimate that about one in four companies in that size category have at least made a start toward

4. For a breakdown of activities by age, see Appendix 1, p. 45.

the less adversarial, more participative environment associated with QWL.

It must be emphasized that the recent surge in QWL activities has barely tapped the potential benefits that might be derived from a large-scale QWL effort. Even among corporations with relatively heavy QWL involvement, much remains to be done. For example, one manufacturing company that has been a leader in the QWL effort has all of its more than 50,000 employees participating in one or another aspect of its program; but only relatively few workers are covered by the new, more innovative activities such as quality circles (7%) and job enlargement (3%). Another 60,000-employee company has a program that encompasses the full array of activities, but none reaches more than 2,000 workers, and most reach only several hundred.

Attitudes Toward Participative Decision Making

We asked corporations to identify the problems experienced during the early stages of their programs. As expected, the greatest problems were those stemming from employee skepticism and resistance to change at all company levels. Lack of management commitment was encountered by one-tenth of the companies and a similar proportion encountered union problems.

Despite these early difficulties, the vast majority of corporations seem to feel that the effort to initiate a QWL program is worthwhile. This is reflected in the response to a question asking for a general assessment of the future of participative management—is it a passing fad or a promising new approach? The response was overwhelmingly favorable.

Table 3

Management's Attitude Toward Participative Management

(Corporations with 500 or more employees)

	Participative Management is:	
	A Fad Destined to Disappear	A Promising New Approach
All Corporations with 500 or More Employees	3%	82%
Manufacturing Corporations	4	83
NYSE-Listed Corporations	3	77

Some Advice to Those Considering a Human Resource Program*

Productivity improvement requires change. How that change is managed will determine how much improvement occurs, if any. To approach productivity improvement on a quick-fix basis through 'a program' seriously limits lasting gains. In reality, productivity improvement needs to be a process, involving all levels and parts of the organization, from top management on down. The process involves education, training, goals, objectives, commitment, measurement, evaluation and feedback.

It is important to realize that time is not of the essence, except as relates to feedback. This latter exception is important in that individuals need a sense that what is being attempted is worthwhile. Failures and weaknesses need to be recognized and dealt with, but so do successes and strengths. Further, there are many mechanisms which can be applied in the attempt to improve productivity. Each situation in the organization must be viewed as unique, and dealt with accordingly. No one mechanism (project teams, task forces, quality circles, employee publications, suggestions systems, etc.) is universally applicable. More than likely a given situation would benefit from the application of more than one mechanism.

Finally, organizational structure has purpose, as provided for in its design. Circumventing defined responsibility, authority and accountability inherent in the design will inevitably result in a deterioration of performance. To prevent this, productivity improvement efforts must occur as a part of the normal line management structure. Staff support personnel must provide their expertise to that management, with line management making, and being responsible for, decisions.

*Mr. Sheldon L. Beavers, Manager of Productivity Services, Minnesota Power, submitted this response to a survey question asking for advice to companies which might be considering a human resource program. It captures the range of comments offered by the respondents. Additional representative responses are included in Appendix 1, p. 45.

7 Evaluation

"Give a new program a chance to succeed. Commit to the results of the pilot before implementation. Continue or discontinue based on results."

a survey respondent

To gain some feel for the effectiveness of their efforts, we asked the corporations to provide three types of evaluations of their programs:

- the impact on productivity of each type of activity,
- the types of improvements resulting from the overall human resource program, and
- a general assessment of whether the programs were successful or not.

Productivity Impact of Individual Activities

The evaluations offered provide strong support for the proposition that a multifaceted human resource program can be effective in boosting productivity. Because many of the activities are recent, many corporations failed to offer evaluations. But in most cases, the responses were sufficient to provide a profile of those activities that show the most promise in terms of productivity improvement. For example: More than 40% of companies with quality circles offered no evaluations (most of them said it was too early to do so), but of the remainder, 28% rated them "very successful," and 29% "somewhat successful." Only 1% of the companies considered quality circles "unsuccessful." Among the activities maintained by at least 15% of the companies, those that received the highest percentages of "very successful" ratings are listed in Table 1.[1]

General Improvements Resulting from Programs

To help assess the overall effects of their programs, we asked the respondents to tell us their experience with a dozen people-related factors of managerial concern. Table 2 gives the proportion of companies which reported improvement in each of the twelve areas of concern.

Most important, both lowered costs and improved productivity were listed by more than half the corporations. Only one company in seven reported that productivity was unchanged; of the remainder, about half said it was too early to evaluate the productivity effects and half offered no evaluation.

The highest incidence of improvement in every area of concern except productivity was reported by the smallest companies,[2] precisely the group that is least likely to consider formal human resource programs.[3] The favorable reports on productivity improvement take on added significance because they are based on reasonably solid data rather than on general impression. Three-fourths of the companies reported that they had specific means for measuring productivity; and two-thirds of all companies felt they could do so with at least "fair" precision.

Table 1

Ten Activities with the Highest Percentages of "Very Successful" Ratings for Productivity Improvement
(Corporations with 500 or more employees)

	Percent of All Corporations
Personalized Hours	44%
Setting Company Objectives	40
Formal Training	37
Task Forces	34
Structuring Plant & Office Space	33
Production Teams	32
Setting Employee Goals	32
Scheduling Work Flow	29
Quality Circles	28
Employee Appraisal and Feedback	28

Table 2

Companies Reporting Improvements Resulting from Programs
(Corporations with 500 or more Employees)

Area of Concern	Percent of All Corporations
Employee Attitudes/Morale	67%
Costs	56
Worker Productivity	55
Product Quality	54
Service	53
Quality of Work Life	48
Safety	45
Overtime	42
Turnover	39
Absenteeism	39
Lateness	38
Formal Grievances	37

1 Appendix 1, p. 47, provides the evaluation for the full list of activities covered in our survey.
2 For productivity, the incidence of improvement did not vary much by size of firm.
3 Appendix 1, p. 47, compares reported improvement by company size.

Overall Assessment

The corporations were asked to sum up by providing an overall evaluation of their human resource programs. More than half of them considered their programs "successful" or "highly successful," and one-quarter rated them "partially successful." The number of corporations in the sample reporting "unsuccessful" was so small as to be statistically insignificant.

Table 3

Overall How Would You Evaluate Your Human Resource Productivity Program to Date?

	Percent of All Corporations (500 or more employees)
Highly Successful	12%
Successful	42
Partially Successful	24
Unsuccessful	0
Too Early to Evaluate	20
No Answer	2
	100%

Conclusion

Human resource programs get good marks for improving productivity and lowering costs. As experience with them mounts, so should their effectiveness. Most companies do not have programs yet, and those that do, tend to have programs limited both in scope of activities and in degree of employee participation.

We estimate that only some 13 million workers employed by corporations with more than one hundred employees are presently covered. That leaves 28 million workers in those companies totally unaffected by any type of human resource activity to enhance their productivity. Since programs are effective in both manufacturing and nonmanufacturing enterprises, and for blue-collar as well as white-collar workers, the potential for improving national productivity growth through Quality-of-Work-Life and other human resource programs seems very promising.

The challenge is to convince corporate America that human resource programs are a good investment, which in the long run will benefit not only the individual corporation and its workers but our entire economy.

Section 3

Sharing the Gains: Financial Incentives and Productivity

"An ever-increasing number of citizens [should] have two sources of income—a paycheck and a share of the profits."

Ronald Reagan, February 1975

8 Gain Sharing: The Theory

"If an employee has a piece of the action, he's going to have a greater concern that the company survives."

an official of the United Steelworkers, 1982

A Piece of the Action

The man speaking to the New York Stock Exchange interviewer was offering his view of Hyatt-Clark Industries, a manufacturing company based in Clark, New Jersey. The terms he used in describing the company were glowing. He spoke of it as an "extraordinarily powerful technical organization" with "the most advanced manufacturing processes in the world"; he added that the people at Hyatt had "enormous accumulated technical experience." In expressing his opinion he was drawing on thirty-five years of experience in manufacturing, the last six with a prestigious consulting firm that had done a special study of Hyatt-Clark.[1]

There was an irony in what the man was saying—and it might have been amusing if it weren't so sad: Hyatt-Clark had come very near to being closed by what had formerly been its parent company, General Motors. G.M. had said that it was much more economical to buy from outside companies than to be supplied by their own subsidiary. But as our manufacturing expert attested, whatever was making Hyatt-Clark an albatross from G.M.'s point of view—and threatening to turn it into a ghost town—could have had nothing to do with the technology of its plant or the skill of its workers. Luckily, the tragedy of a shutdown was avoided. Now G.M. is still supplied by Hyatt-Clark, but on a different footing: In 1981 G.M. sold the company to its union local.

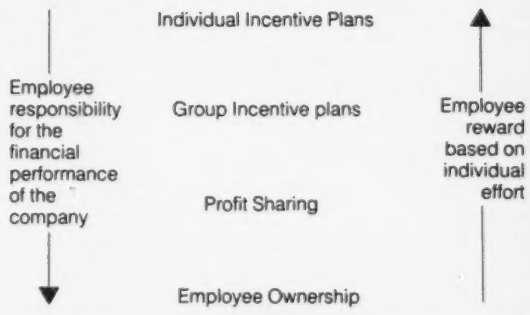
In retrospect, it is clear that part of the company's problem had to do with worker motivation. Since the employee takeover some divisions of the plant have had an unheard of doubling and tripling in output per worker. This quantum leap in productivity has mainly been the result of two factors. First, the union has agreed to the abolition of restrictive work rules. This has meant, among other things, that the same worker can tend more machines and that a number of jobs now deemed unnecessary could be abolished altogether. Second, there has been a huge increase in worker effort, a point that has been confirmed by one of the heads of the union local. He has said that before the worker takeover "a lot of people were only working a few hours a day" but that now they were "pulling their weight when they weren't doing it before."[2]

One lesson we might draw from this story is that worker attitudes can change dramatically when workers are offered a piece of the action.[3] It is one instance of the potency of *gain sharing*, the umbrella term we will use for tying a portion of labor's income to productivity or profits rather than to a fixed wage. In this chapter and the next we will explore the impact of gain sharing on people and productivity.

The Spectrum of Possibilities

As our accompanying diagram illustrates, one can place along a spectrum the various ways of sharing gains with workers. At one end of the spectrum there is maximum participation in the finances of the company; at the other end participation is at a minimum.[4]

The Spectrum


Individual Incentive Plans
Employee responsibility for the financial performance of the company
Group Incentive plans
Employee reward based on individual effort
Profit Sharing
Employee Ownership

To begin with, there are individual incentive plans in which a worker's income is tied partly or wholly to his personal output. One of the

1. Tape-recorded interview with C. Douglas Howell (2/24/82). At that time Howell was temporarily acting as President of Hyatt-Clark Industries, Clark, New Jersey.
2. Tape-recorded interview with James Zarello (2/24/82), Shop Chairman, Local 736, Hyatt-Clark Industries, Clark, New Jersey.
3. The change at Hyatt-Clark has also involved greater worker involvement in decision making. For more on the connection between gain sharing and worker involvement, see Chapter 9, p. 35.
4. This taxonomy is adapted from an idea originally outlined to a New York Stock Exchange interviewer by Bert L. Metzger, President, Profit Sharing Research Foundation, Evanston, Illinois.

oldest of these is the piece-rate system. Although piece rates conjure up an image of the sweatshop, they are compatible with any kind of work environment—and they aren't necessarily a way of cheating the worker. Today the most common kind of individual incentive plan is the salesman's commission.

Next on the spectrum are ways of rewarding the productivity of the group.[5] One approach currently in use is called *Improshare* (*Im*proved *pro*ductivity through *shar*ing), developed in the 1970s by an industrial engineer named Mitchell Fein. Under Improshare, workers get periodic bonuses that are directly linked to increases in output. In the past eight years Improshare plans have been instituted at more than one hundred companies including General Electric, Firestone, Bell and Howell, Weyerhaeuser, and Phillips Petroleum.[6]

Next on the spectrum is profit sharing. Profit sharing broadens the financial participation of the worker still further by making his or her compensation depend not on an increase in output but on an increase in profit: A company can be unprofitable even if its output per worker is high.

Finally, at the extreme end of the spectrum is worker ownership, which, as at Hyatt-Clark, involves both sharing in the profits and sharing in the losses.

One way of looking at this spectrum is to say that it shows gradations of financial responsibility toward the company. The worker on the piece-rate system takes a certain measure of financial responsibility for his output: If he produces less he will get less. A worker on a group plan is taking even greater responsibility, since he has to worry about the synergy of group effort: Even if he produces more, he gets no bonus unless the group's output increases. At the other extreme worker owners are taking full financial responsibility—for the output of the working group, for the marketing effectiveness of the company, and for the factors beyond the company's control that might determine its profits and losses.

There is a related connection between individual effort and reward on the spectrum. For instance, where bonuses depend on profits, individual effort may go unrewarded if profits are not earned. But on a piece-rate system the fit between individual effort and reward is much closer.

None of these observations is meant to imply that one approach is better than another. Much depends on a company's particular circumstances. For instance, in many cases an individual incentive plan may not be feasible even if a company would like to institute it: The work environment may be such that all output is dependent on group effort, a fact of life that applies to most manufacturing assembly lines. In addition, even if an individual incentive plan were feasible, a company may take the view that a group incentive plan is better as a means of motivating workers to encourage and help one another. In other cases, there may be a preference for profit sharing: The feeling may be that in the long run workers will contribute more to the company if they are used to thinking in terms of a company's bottom line. Another advantage to profit sharing over individual or group incentive plans is that it is more closely connected with ability to pay. Companies whose bottom line is particularly sensitive to business cycles may find that profit sharing is their only way of having a gain-sharing plan.[7]

Finally, none of these approaches is mutually exclusive. For instance, M.W. Carr & Co., a manufacturer of photo and portrait frames in Somerville, Mass., provides workers with both individual and group incentive plans. In addition, the workers own the company.

The Underlying Philosophy

The case for gain sharing draws on our belief in the efficacy of the market system. If we had to explain why economies based on this system enjoy the highest productivity the world has ever seen, we would give one principal reason: The market recognizes that financial incentives are a prime motivator of work behavior. The advocates of gain sharing seek to give the fullest possible scope to this idea by making financial incentives a part of everyone's working life. In that way gain sharing can forge an identity of interest between employees and owners.

It is a commonplace that individuals operating their own businesses are willing to work sixty hours a week at it if need be. But put them on a fixed wage and they will be reluctant to work more than forty hours. Gain sharing proposes to bridge the gap between these two widely different situations.

5. Much of the material on group plans is drawn from "Productivity Gain-Sharing Plans," a background paper written especially for the New York Stock Exchange by Prof. John W. Kendrick of George Washington University.
6. Other well-known and commonly used approaches include *Scanlon* and *Rucker*. For further discussion, see "Productivity Gain-Sharing Formulas," Appendix 1, p. 47.
7. It is also possible for the profit sharing component of labor's income to be so large that the financial incentive plan amounts to a form of loss sharing when bonuses aren't paid. When profits are large, labor's income (base wage plus bonus) would be higher than the going rate; but when profits are nonexistent, labor's income (base wage without bonus) would be lower than the going rate—i.e., a form of loss sharing. For further discussion, see addendum to this chapter, "Gain Sharing, Unemployment, and Inflation."

In 1975, Ronald Reagan delivered an interesting statement on behalf of gain sharing, in this case focusing on employee ownership. President Reagan has long been a supporter of employee stock ownership plans (ESOPs), a means by which corporations can get tax benefits for distributing stock to their employees; the President's Economic Recovery Tax Act of 1981 gave employee stock ownership a substantial boost. In his 1975 speech he drew an historical analogy:

More than one hundred years ago, Abe Lincoln signed the Homestead Act making it possible for our people to own land. The Homestead Act set the pattern for American capitalism. Now we need an industrial Homestead Act, and that isn't impossible. As a matter of fact, any number of companies and corporations in America have tried in a variety of ways to spread ownership to their employees.[8]

Mr. Reagan went on to speak of the importance of giving each employee a "vested interest in the company's ability to prosper and to increase earnings."

How important a role, if any, does that vested interest play in boosting productivity? The next chapter will review the evidence.

Addendum: Gain Sharing, Unemployment, and Inflation

Certain forms of gain sharing directly address the problems of unemployment and inflation. These forms include any kind in which gains are tied to the financial performance of the company, rather than to physical productivity. An additional stipulation is that gain sharing comprise a substantial percentage of labor's income. Otherwise the effect on unemployment and inflation will not be meaningful.

To see how gain sharing addresses these problems, consider profit sharing as a primary example:

- Inflation: If wage increases depend on profitability, then wages will go up only if profits do also. And if that happens, then wages will no longer push up prices. In an interview he granted in 1958, the late Walter Reuther once made this very point. According to Reuther:

  What we ought to do is to work out the equities in two stages in which we deliberately understate the size of the equity of the wage earner in our minimum demand, so that we will be certain it will have no inflationary impact. Give us a down payment now—represented by our minimum demand—and we will defer the realization of the balance of our equity until you've completed the year, the consumer has paid his price, and you've made your profits.[9]

- Unemployment: Since profit sharing means that wages go down as well as up, it also means that labor costs can automatically decline in bad times. For instance, assume Reuther's down-payment approach. In a profitable year, labor gets its minimum demand plus a share of the profits; in an unprofitable year the minimum demand becomes the wage. If that happens, cost pressures would ease and layoffs could be substantially reduced.

Viewed from this perspective, even if gain sharing had no positive effect on productivity, it could have an enormous positive effect on employment and therefore on overall output. In particular, say that the government is imposing monetary restraint on the economy in order to put a brake on inflation: A tragic side effect of tight money is unemployment. But with gain sharing general throughout the economy, then prices and wages would be downwardly flexible. The result would be that unemployment would be substantially diminished; and with higher employment, the economy's output would be higher as well.[10]

In addition, there might also be a positive effect on productivity. If gain sharing could help ensure stability of employment, then that could aid productivity in the workplace, as the Japanese example suggests.

At this point gain-sharing plans are not ambitious enough, or widespread enough, to bring this kind of resiliency to the economy. But their potential for dealing with a fundamental problem is very real.

8. From transcript of a radio broadcast, "Viewpoint with Ronald Reagan," February, 1975.
9. "How Do We Live with Bigness? Interview," *The New Republic*, July 21, 1982, p. 15.
10. For more on this see Daniel J. B. Mitchell, "Gain-Sharing: An Anti-inflation Reform," *Challenge*, July/August, 1982. Prof. Mitchell proposes tax incentives to support gain-sharing approaches of this kind.

9 Gain Sharing: The Evidence

"The results of productivity sharing plans suggest that these plans offer a viable method of enhancing productivity at the firm level."

General Accounting Office study of the subject, March, 1981.

In the previous chapter we reviewed the theory of human motivation suggesting that gain sharing has a positive effect on productivity. We are now ready to look at some of the evidence underlying this claim.

Outside Empirical Work

A number of studies have been done on the performance of companies that have some kind of gain-sharing plan; most of these studies have focused on employee stock ownership or on group incentive plans. The striking fact is the unanimity of their conclusions: To our knowledge, *all* of the studies have shown positive results. For instance:

- A one-year follow up of seventy-two companies using Improshare (described in the previous chapter) found impressive gains in productivity: an average increase for all companies of 20%.[1]
- A study done for the Department of Commerce of companies with stock ownership plans found a statistical correlation between employee ownership and profitability: Other things being equal, the greater the equity the employees owned, the greater the company's degree of profitability.[2]
- A General Accounting Office study of firms with productivity gain-sharing programs found that as a result of these programs the firms were reporting substantial savings in labor costs per unit of output. The study also found that firms showing the best performance had plans in effect the longest. For companies with plans in effect less than five years, savings in labor costs averaged 8.5%; for companies with plans in effect more than five years, savings averaged almost 29%.[3]

The NYSE Survey

Not only did the NYSE survey confirm the findings of the foregoing studies, but it also made available for the first time estimates regarding the magnitude of this country's involvement in gain sharing. Our survey revealed approximately 15% of all U.S. companies with 500 or more employees to have some kind of gain-sharing plan: piecework, group productivity plans, profit sharing, or stock purchase. Study findings relating to gain sharing can be summarized as follows:

Profile What kinds of companies have gain-sharing plans? First, although all size classifications and all types of industries are represented, companies with greater numbers of employees are more likely to have gain-sharing plans. This distinction aside, survey results suggest that such companies share at least one other important characteristic: Far more than most companies, they appear to maintain an open and participative atmosphere among their workers. We infer this conclusion from two principal findings, shown on Charts 1 and 2. First, a sizeable percentage of companies with gain-sharing plans also reported that they had quality circles. As Chart 1 shows, in the case of companies with employee stock purchase plans, this was as high as 56%. These figures are far out of proportion to U.S. companies generally; according to the NYSE survey, quality circles are in use at approximately 14% of U.S. corporations with 500 or more employees. Second, and even more striking, is the percentage of gain-sharing companies reporting that their nonmanagement employees participate in decision making: 78% of companies with piecework, 63% of companies with group productivity, 70% of companies with profit sharing, and 82% with stock purchase plans. Very likely the connection between employee decision making and gain sharing is more than coincidental: Financial participation in a company probably generates other forms of participation as well.

1. Mitchell Fein, "Improved Productivity Through Worker Involvement," published by Mitchell Fein, Inc., 1982. For data, see "Productivity Improvement Obtained in Improshare Companies," Appendix 1, p. 48.
2. Michael Conte and Arnold S. Tannenbaum, "Employee-Owned Companies: Is the Difference Measurable?", *Monthly Labor Review*, July, 1978.
3. Cited in Kendrick, "Productivity Gain-Sharing Plans," pp. 35-37.

Chart 1

Proportion of Gain-Sharing Companies With Quality Circles
(Companies with 500 or more employees)

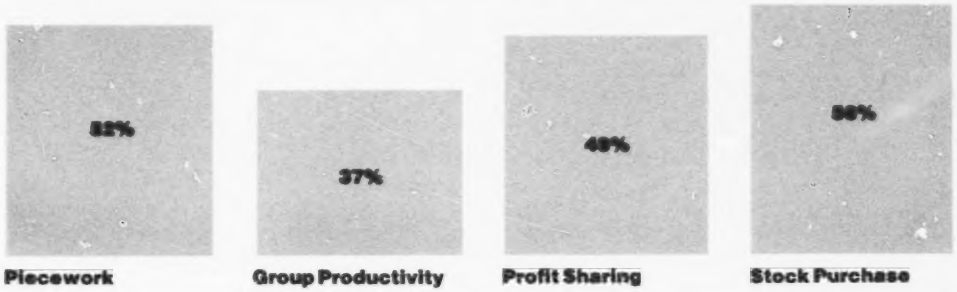
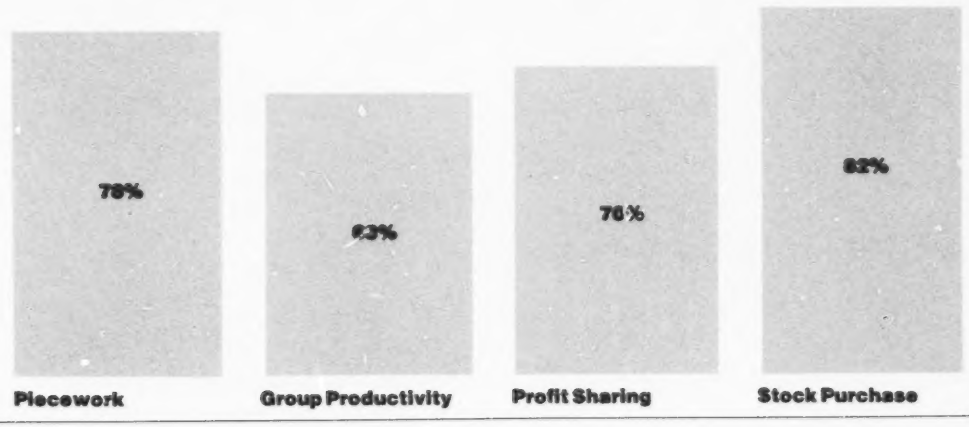


Chart 2

Proportion of Gain-Sharing Companies with Employees Involved in Decision-Making
(Companies with 500 or more employees)



Effect on Productivity

The respondents were asked if their gain-sharing program was successful in terms of improving productivity. Table 1 summarizes the results, both for companies generally and for those listed on the New York Stock Exchange.

- The results for piecework are the highest of all: 77% of respondents report success in improving productivity. In the case of NYSE-listed companies, those reporting success were a substantial 69%.
- The results for group productivity plans show 74% of all companies reporting success but considerably fewer—45%—among NYSE-listed corporations; almost no companies report lack of success. The rest either did not respond or believed that it was too early to make an evaluation. But the high success rate among companies that did respond suggests strong positive results.

Table 1

Success at Improving Productivity Among Gain-Sharing Companies
(Companies with 500 or more employees)

	Piecework		Group Productivity		Profit Sharing		Stock Purchase	
	Total	NYSE	Total	NYSE	Total	NYSE	Total	NYSE
Successful	77%	69%	74%	45%	73%	86%	61%	62%
Unsuccessful	3	6	2	5	5	1	15	11
Too Early To Evaluate	0	0	16	30	2	2	12	8
Don't Know	1	2	0	0	0	0	1	2
No Response	19	23	8	20	20	11	11	17

- Nearly three out of four gain-sharing companies report success with profit sharing plans: 73% in the case of companies generally, 86% in the case of companies that are NYSE-listed.
- Finally, Table 1 shows a majority of companies reporting success with stock purchase plans. Success is about the same for both NYSE and all companies.

Conclusion

On the basis of the evidence and the underlying theory, it appears that gain sharing can play an important role in motivating people to be more productive.

Summary and Conclusions

The main finding of our study is simply this: There is enormous potential to boost productivity in the workplace by better utilizing our people.

This review of the highlights of our study puts forward no comprehensive agenda for action. Rather, our aim is to alert people to some of those areas in which action might be considered.

Learning from the Japanese

Our discussion of what Americans can learn from the Japanese began with a look at some things that they might learn from us. In particular, we reviewed certain patterns of discrimination in the Japanese workplace that detract from their productivity, most of which would be against the law in this country.

Pointing out that the Japanese do a few things wrong is meant primarily as an antidote to the uncritical attitude that prevails among some Americans toward all things Japanese. Moreover, even with regard to the many things the Japanese do right, a sense of caution is in order. Theirs is a society that differs in fundamental ways from our own: For instance, compared with theirs, our society is extremely heterogeneous. Accordingly, practices that may work well for them may work poorly for us. At most, then, we should adapt but not adopt the Japanese way of doing things.

The Schools

One of the things the Japanese do right is in schooling their people; the extraordinary effectiveness of their schools is one relatively neglected reason for their high productivity. By comparison, our own schools are failing to provide our young people with the preparation they need to reach their full productive potential. Given the magnitude of the problem, the business community should seriously consider playing a more active role in helping to make our schools more effective.

Training Managers

We found a pattern of training corporate managers in Japan that differs fundamentally from the pattern in the U.S. In particular, we found:

- a practice of providing managers-to-be with "front-lines" experience in the basic processes of their company;
- that managers-to-be are required to spend a long apprenticeship in which they acquire not only technical skills, but a deeply felt knowledge of the people of their organization.

By contrast, American managers generally serve a much shorter apprenticeship before assuming executive positions and very rarely get anything similar to front-lines experience. As a result American managers are not so well trained as their Japanese counterparts in the human knowledge of the organizations they run.

The Japanese can make these enormous investments in time and effort in preparing their managers because they know that these people have made a lifetime commitment to the company; accordingly, the Japanese company need have no concern about reaping the full payoff from its investment. American companies have no such advantage. Nonetheless, any American company that wants to rethink its policies in this area might consider the advantages of creating a loyal core of managers who have a marrow-deep knowledge of the organization and how it works. The company might decide that the benefits of this achievement exceed the risks and costs.

Applicability of Japanese Management to the U.S.

In order to get a better fix on the applicability of Japanese management methods to the American workforce, we asked Prof. Richard T. Pascale to examine the performance of Japanese-owned companies in the U.S. The companies are managed by Japanese nationals but have American workforces. Pascale matched these companies with American run companies that are similar in major respects. Examples include Sony and Zenith, Japan Airlines and United Airlines, Toyota auto distributors and Ford auto distributors, and Kawasaki and Harley Davidson.

Pascale found that more than in the American firms Japanese managers showed:

- when reaching a decision, greater interest in the opinions of their employees;
- greater concern with worker well-being generally;
- greater concern with product quality; and
- greater effective concern for the job security of their employees.

In effect, the Japanese are simply reminding us of some of the principles of good management.

The NYSE Survey

The NYSE has conducted the first broad-based survey of human resource programs to boost

productivity, with special emphasis on worker participation and other facets of the Quality-of-Work-Life (QWL) movement. The major survey findings are as follows:

- Only one in seven companies with one hundred or more employees has some kind of program.
- The one in seven, however, account for just over half of all corporate employees in the U.S.
- In companies with programs, typically 60% of the employees are involved in some facet of the program—some 13 million workers in all. This 13 million accounts for less than one third of the 41 million people currently employed in corporations with one hundred or more employees.
- The larger the company, the more likely it is to have a program.
- The driving force behind human resource programs is to increase competitiveness by improving productivity and cutting costs.
- Many companies report a "change in management philosophy." Their new outlook on labor relations seems linked to favorable reports about the benefits of QWL.
- Quality circles are spreading, particularly among manufacturing firms and large companies: Two-thirds of companies with 5,000 or more employees include them in their programs.
- Companies report that their efforts are successful in:
  - — increasing productivity,
  - — raising morale,
  - — reducing costs,
  - — improving service,
  - — raising product quality,
  - — reducing employee turnover, absenteeism, lateness, and grievances.
- Managements consider participative management a significant long-run approach to raising productivity and not a passing fad.
- Companies typically measure their productivity in a formal way. The largest productivity improvement from QWL was reported by the smaller companies, the group with the lowest incidence of such programs.

The potential for improving national productivity through human resource programs remains large since:

- Most companies have not yet adopted programs.
- Existing programs are limited and 40% of employees that have them are not covered.
- Human resource programs have major effects on productivity growth and improve employee attitudes and morale.

Gain Sharing

Gain sharing refers to all forms of financial incentive plans: piece rates, group plans, profit sharing, and stock ownership.

Our survey asked companies with these plans to report their effect on productivity improvement. Positive results were reported by:

- 77% of companies with piecework programs;
- 74% of those with group plans;
- 73% of those with profit sharing plans;
- 61% of those with stock purchase plans.

Thus, companies with gain-sharing plans have found that these plans do have a positive effect on boosting productivity.

People and Productivity

How can we improve the productivity of our people? Our study points in a few directions, including:

- more effective education of our workforce;
- better training of our managers in the human side of the organizations they run;
- more employee involvement in decision making; and
- sharing the financial gains of better company performance.

The Quality of Life: Both End and Means

We began this study by pointing out that there is a vital link between higher productivity and a rise in living standards, and that higher living standards are a necessary part of a better quality of life. We can now see from our findings that higher productivity is achieved by improving the quality of life in the workplace itself—when people are better educated, more humanely treated, more involved in decision making, and better rewarded for their efforts.

Thus we find that ends and means are the same: The challenge to corporate America is to improve quality of life in the workplace; by doing so, it will boost productivity—and in that way help achieve a better quality of life generally.

Appendices and Bibliography

Appendix 1

The Status of Women in Japanese Society *(Chapter 1)*

The discussion in the text about the status of women is based primarily on interviews with Dr. Thomas P. Rohlen. Among other scholars there appears to be little disagreement about the inferior status of women in Japanese society. For instance, in *The Japanese,* Prof. Edwin O. Reischauer writes that "the position of women and the relationship between the sexes are aspects of Japanese society that often stir indignation among Western women, particularly Americans." Reischauer adds that "attitudes of male chauvinism are blatantly evident in Japan" and that "there is severe job discrimination against women" (p. 204).

The table below provides one indication of the comparative status of Japanese and American women. As the table indicates, in the U.S. about the same percentage of men and women attend high school and college up through the B.A. or equivalent. But in Japan the pattern is very different: A far larger percentage of men (39% vs. 12%) graduate with a B.A. or equivalent.

Comparative Educational Outcomes: Japan and U.S.*

	Japan[1]		U.S.[2]	
	Men	Women	Men	Women
Graduated from High School	90%	91%	73%	77%
Graduated with a B.A. or Equivalent	39	12	25	24

Sources:
1. *Waga Kuni Kyoiku Suijun,* Tokyo: Mombusho, 1975.
2. *Digest of Education Statistics,* U.S. Dept. of Health, Education and Welfare, Education Division.

*For age group that was 17 in 1974. This table adapted from Rohlen, *"Japan's High Schools,"* ms., p. 4.

The Economics of Japan's Seniority System *(Chapter 1)*

The Japanese company pushes out older workers partly because pay scales are based on a seniority system. Given this system, the company will save money if it retires an older worker and replaces him with a lower paid younger worker. But this means, in effect, that older workers are overpaid in relation to their real productivity. A better solution for all concerned would be to pay the older worker a wage more in line with his productivity. Then the company would find it economical to retain older workers–and society's overall productivity would rise as a result.

I.Q. and Education in Japan *(Chapter 2)*

In the text we argue that at least part of the increase in the Japanese I.Q. is attributable to the improvement in the educational system. This view differs from that of Richard Lynn, author of the article on the Japanese I.Q. that is referenced in our text. Lynn writes that since "the increase in I.Q. was present among 6-yr.-olds...it cannot be explained in terms of improvements in education and must be attributed to effects taking place before the age of six" (p. 223). But what Mr. Lynn does not realize is that improvements in education are precisely one of these effects taking place before age six. At the time the test was given most six year olds had completed two years of schooling which included instruction in reading; whereas in earlier years most of Japan's six year olds did not have the benefit of this schooling.

Math and Science Mean Scores *(Chapter 2)*

The following three tables include all advanced industrial countries whose schoolchildren were given standardized tests in math and science. The results show that:

- schoolchildren in Japan score highest;
- their variation ("coefficient of variation") around the mean is among the lowest; and
- their scores are far higher than those of the U.S. schoolchildren.

Math: Thirteen Year Olds

Country	Mean Score	Coefficient of Variation
Japan	31.2	.542
Belgium	27.7	.542
Finland	24.1	.411
The Netherlands	23.9	.665
Australia	20.2	.693
England	19.3	.881
Scotland	19.1	.764
France	18.3	.678
United States	16.2	.821
Sweden	15.7	.689

Source:
Torstein Husen, ed., *International Study of Achievement in Mathematics: A Comparison of Twelve Countries,* Vol. II., New York, John Wiley & Sons, 1967.

Science: Eleven Year Olds

Country	Mean Score	Coefficient of Variation
Japan	21.7	.355
Sweden	18.3	.399
Belgium (Flemish)	17.9	.408
United States	17.7	.525
Finland	17.5	.468
Hungary	16.7	.479
Italy	16.5	.521
England	15.7	.541
The Netherlands	15.3	.497
Federal Republic of Germany	14.9	.497
Scotland	14.0	.600
Belgium (French)	13.9	.511

Source:
L. C. Comber and John P. Keeves, *Science Education in Nineteen Countries*, New York: John Wiley & Sons, 1973, pp. 108, 159.

Science: Fourteen Year Olds

Country	Mean Score	Coefficient of Variation
Japan	31.2	.474
Hungary	29.1	.436
Australia	24.6	.545
New Zealand	24.2	.533
Federal Republic of Germany	23.7	.485
Sweden	21.7	.539
United States	21.6	.537
Scotland	21.4	.664
England	21.3	.662
Belgium (Flemish)	21.2	.434
Finland	20.5	.517
Italy	18.5	.551
The Netherlands	17.8	.562
Belgium (French)	15.4	.571

Source:
L. C. Comber and John P. Keeves, *Science Education in Nineteen Countries*, New York: John Wiley & Sons, 1973, pp. 108, 159.

Comparative Patterns of Decision Making in Japanese-and American-Managed Firms *(Chapter 4)*

Boss' Non-Routine Decisions in Which He	Japanese-Managed Firms	American-Managed Firms
Decides alone	24%	29%
Gets factual input from subordinates	24	31
Consults with subordinates for opinions and recommendations	52	40

Source: Research by Prof. Richard Tanner Pascale

Comparative Ways of Dealing with Absenteeism in Japanese-and American-Managed Firms *(Chapter 4)*

Absentees Receiving	Japanese-Managed Firms	American-Managed Firms
Fact finding and counseling	61%	37%
Punishment	16	31
Other	23	32

Source: Research by Prof. Richard Tanner Pascale

Quality Circles Among Japanese-Managed Companies in the U.S. *(Chapter 4)*

Very few Japanese-owned firms in the U.S. have attempted to start quality circles in their U.S. operations. Pascale did not ask firms in 1974-76 about the use of quality circles in the U.S.; however, JETRO (1981) reports that only 20 of the 238 operations they surveyed had implemented quality circles. Additional firms were planning circles in the future, a response, JETRO indicates, to the current widespread interest in circles within the U.S. None of the firms revisited by Pascale in 1982 had an established circle program although one firm will initiate a program once its employees have adapted to the group orientation upon which the circle concept is based.

Pascale's Methodology in Measuring Productivity *(Chapter 4)*

Pascale writes: "Productivity data were collected at each research site. For each industry, managers and outside industry experts were consulted on the fairness and appropriateness of measures to be used. In the manufacturing industries, performance measures were based upon output per unit of labor. (Owing to accounting practices and hidden subsidies provided by Japanese firms to their subsidiaries, financial performance measures, such as costs and profitability, were not utilized in this investigation.) An effort was made to control for extraneous variables such as differences in production technology and economies of scale. In each instance, tasks were chosen which were virtually identical in the Japanese and American companies. For example, in television manufacturing there are important internal design differences between American and Japanese television sets. However, once the TV chassis is assembled, the final assembly process of inserting the

chassis into the case and inspecting the set for defects in color, audio, resolution, definition, and so forth, was performed in a virtually identical manner at the two plants. Other extraneous variables, such as the tools used and production line speeds, were also closely comparable at matched sites. As a second example, in the banking industry, teller speed and accuracy rates as a function of each branch's volume of transactions were deemed an appropriate measure of productivity." (Taken from Richard Tanner Pascale, "Personnel Practices and Employee Attitudes: A Study of Japanese- and American-Managed Firms in the United States," pp. 610-611; see Bibliography for full reference.)

Typical Programs by Employment Size and Other Company Characteristics*

(Chapter 6)

500-999 Employees

Formal training & instruction	Job design/redesign
Employee appraisal & feedback	Scheduling work flow
Setting employee goals	Structuring plant, office space
Setting company objectives	Labor advisory groups

1,000-4,999 Employees

Employee appraisal & feedback	Organizational structure
Formal training & instruction	Survey of employee attitudes
Setting employee goals	Bonus
Setting company objectives	Job design/redesign

5,000-24,999 Employees

Formal training & instruction	Setting company objectives
Employee appraisal & feedback	Suggestion system
Setting employee goals	Scheduling work flow
Quality circles	Job design/redesign
Survey of employee attitudes	Organizational structure

25,000 or More Employees

Formal training & instruction	Setting company objectives
Employee appraisal & feedback	Job design/redesign
Survey of employee attitudes	Suggestion system
Setting employee goals	Task forces
Quality circles	Organizational structure

NYSE-Listed Corporations

Formal training & instruction	Quality circles
Employee appraisal & feedback	Suggestion system
Setting employee goals	Job design/redesign
Setting company objectives	Organizational structure
Survey of employee attitudes	

All Nonmanufacturing

Formal training & instruction	Scheduling work flow
Employee appraisal & feedback	Suggestion system
Setting employee goals	Job design/redesign
Setting company objectives	Bonus
Survey of employee attitudes	

All Manufacturing

Formal training & instruction	Setting company objectives
Employee appraisal & feedback	Survey of employee attitudes
Setting employee goals	Organizational structure
Quality circles	Scheduling work flow
Job design/redesign	

Manufacturers with 10,000 or More Employees

Formal training & instruction	Suggestion system
Quality circles	Setting company objectives
Employee appraisal & feedback	Organizational structure
Setting employee goals	Job design/redesign
Survey of employee attitudes	Task forces

* Typical programs were selected by computing the average number of activities per program and then taking the most prevalent activities in the group. For example, in the 500-999 employee group, programs were comprised of about eight activities—the leading one being formal training and instruction, and the eighth most popular being labor advisory groups.

Percentage of Corporations Having Specified Activity (Chapter 6)

		Employment Size					Manufacturing		
Activities	Total	500-999	1,000-4,999	5,000-24,999	25,000+	NYSE-Listed	All	10,000+ Employees	All Nonmanufacturing
Job design/redesign	46%	51%	39%	47%	56%	42%	50%	45%	42%
Job enlargement	22	22	15	30	34	25	21	29	23
Job rotation	18	14	16	23	38	25	16	31	21
Formal training & instruction	76	75	68	87	89	82	74	87	78
Setting employee goals	64	58	66	74	68	67	59	69	70
Employee appraisal & feedback	72	62	79	82	75	75	67	71	77
Setting company objectives	55	54	54	55	57	58	49	55	61
Structuring plant & office space	29	43	15	34	17	22	34	23	23
Organizational structure	40	36	42	45	44	42	41	49	39
Scheduling work flow	43	46	37	49	41	41	40	39	46
Personalized work hours	28	35	20	21	41	27	24	30	33
Suggestion systems	38	29	36	54	56	48	34	57	44
Labor/management committees	25	30	17	27	30	26	34	36	14
Labor advisory groups	6	8	4	5	8	4	8	5	4
Quality circles	44	43	29	66	65	55	58	75	27
Production teams	16	12	12	28	32	26	23	41	9
Salarying blue collar workers	6	6	3	12	12	6	9	14	3
Task forces	35	31	30	42	50	40	37	42	32
Surveys of employee attitudes	45	33	42	64	70	57	43	61	47
Financial incentives									
Piecework	10	9	6	17	15	14	14	20	4
Group productivity	7	8	4	9	16	9	6	11	9
Profit sharing	25	30	19	31	18	22	23	19	27
Stock purchase plans	21	17	22	27	23	33	26	27	16

Age Distribution of Program Activities (Chapter 6)

Activities[1]	Under 6 Mos.	6 to under 12 Months	1 to under 2 Years	2 to under 5 Years	5 to under 10 Years	10 years or More	Don't Know	No Answer
Job design/redesign	5%	12%	19%	20%	6%	4%	4%	30%
Job enlargement	8	5	14	28	7	3	1	34
Job rotation	2	5	6	33	10	10	1	33
Formal training & instruction	3	7	16	29	12	8	2	24
Setting employee goals	3	7	18	31	9	8	4	21
Employee appraisal & feedback	2	6	11	28	15	10	4	23
Setting company objectives	3	6	11	23	18	8	6	26
Structuring plant & office space	8	14	28	11	11	5	1	23
Organizational structure	6	7	12	26	9	4	3	32
Scheduling work flow	3	6	9	33	5	9	6	29
Personalized work hours	3	6	14	38	16	6	1	16
Suggestion systems	9	1	9	16	21	13	2	30
Labor/management committees	4	4	10	22	7	23	9	21
Labor advisory groups	0	7	8	34	1	25	1	25
Quality circles	15	30	29	.1	4	2	0	10
Production teams	3	5	21	32	6	9	2	23
Salarying blue collar workers	0	0	3	35	18	13	3	29
Task forces	8	14	10	23	9	4	8	24
Surveys of employee attitudes	6	11	8	20	19	8	2	28
Financial Incentives								
Piecework	0	0	1	8	6	36	22	27
Group productivity	8	5	17	13	3	42	2	11
Profit sharing	2	0	4	6	14	40	2	31
Stock purchase plans	10	2	3	17	26	16	2	25
All activities[2]	**5%**	**8%**	**14%**	**24%**	**12%**	**10%**	**4%**	**24%**

1. Numbers may not add to 100% because of rounding.
2. Weighted average.

Some Advice From People Who Have Experience With Programs *(Chapter 6)*

Respondents to our survey were asked for the advice they would give to someone considering an effort aimed at boosting productivity through human resource programs. Here are some representative responses.

"Don't try to move too fast. Be sure mid and lower level management is prepared for and can accept change."

"Be sure senior management is properly exposed/educated."

"Define your objectives and train all levels of management."

"Not to give up and get discouraged too easily."

"Facilitate design and implementation as opposed to 'top down' mandated approach i.e. . . . for the most part a user designed and administered process; be patient and recognize it will take time; be prepared to support lower levels beyond what has been done in the past and listen."

"Don't rush into it. Take the time to evaluate the multitude of prograr `s available on the market. Choose one(s) that can be personalized and adapted to your company. Devote the time to train your leaders and members. Don't expect or demand immediate results. Conversion takes time."

"Do not rush in too fast. Explore all the options before making a choice. Too many quick fixes on the market."

"Be sensitive to the attitudes of employees in the timing of implementation; include top management role in program presentation; be sure thrust of program is one of positive reinforcement."

"They are very worthwhile but management shouldn't view them as 'The' solution."

"Do not underestimate the costs or commitment necessary to obtain desired goals."

"Obtain top management commitment. Try many approaches. Learn from successes and mistakes. Don't get hung up on measurement."

"Establish an overall corporate commitment and plan—communicate to all employees."

"Be honest with yourself about why you are doing program, how will it be supported, and how it can effectively operate in your environment."

"Assess organizational climate and build commitment to program by providing accurate information, involve participants in planning and execution of project, and reward them for participation."

"Pilot everything. Success in this area involves some risk. Pilot programs can fail without excessive trauma. The removal of the fear of failure breeds success. Pilots facilitate implementation and short-circuit endless planning. (The world is full of good ideas. It has few implementers.)"

"Don't allow successful programs to atrophy when implementing new or follow-on programs. Success must be sustained in order to provide the foundation for new programs."

"Take it one step at a time—build success upon success."

"Support of CEO is essential. Must be designed to meet organization's needs and objectives. Must be understood by employees involved."

"Be realistic and have long term focus—management and systems change are not easily accomplished."

"Patience regarding measurement. Visible top management support. Let them do their own thing."

"Push awareness."

"Fully explain and discuss any programs with the employees involved; without their full understanding and cooperation, little can be gained."

"Careful front work (i.e., planning) management input and then dedicated maintenance, evaluation and improvement. They should not be entered into casually or with limited support from top management. Pilot programs should be used whenever possible to gauge performance of programs before full commitment is made. Clear outlining of goals and values for those responsible for coordinating and teaching productivity programs."

"You have to be willing to accept risk. Must have action-oriented approach."

"Analyze problems and potential solutions for *your* company. Design systems to fit your company's needs. Gain top management and employee support. Make productivity improvement an internal part of management responsibilities, not the responsibility of one person or one committee. Place top priority on good communications."

"Plan carefully—no false starts. Training. Outside assistance."

"After the program has been identified, planned, and proposed by middle management, have it announced and goal identified by the top executive of the company."

"Must believe in what you are doing. Must demonstrate to your employees your commitment to the program through actions. Must have support of lower and middle management. Must insure proper training and retraining of all employees. Must provide feedback to employees of program."

"Utilize the expertise of a proven consultant. Get support of top management. Be willing to invest time and money in training and in the process of participative management."

"Plan well and execute on timely basis. Identify company objectives. Analyze current systems in light of objectives. Plan improvement efforts. Implement without fanfare. Evaluate and be prepared to expand pilot program or drop as needed. Avoid quick fixes."

"Get some experienced help. If a union business, start with the union. Involve everyone. Assure that productivity measurements are relevant, honest, and tied to bottom line profitability."

"Keep it simple."

How Corporations Rate the Impact on Productivity of Specific Activities (Chapter 7)

Activities[1]	Percent Distribution: Very Successful	Somewhat Successful	Unsuccessful	Too Early to Evaluate	No Response
Job design/redesign	26%	48%	1%	11%	15%
Job enlargement	25	42	1	17	16
Job rotation	24	43	1	9	23
Formal training & instruction	37	40	0	10	13
Setting employee goals	32	40	1	13	15
Employee appraisal & feedback	28	45	1	12	15
Setting company objectives	40	31	0	10	19
Structuring plant & office space	33	32	0	19	16
Organizational structure	26	43	1	10	20
Scheduling work flow	29	37	0	12	21
Personalized work hours	44	32	0	12	12
Suggestion systems	13	49	14	9	16
Labor/management committees	16	55	9	10	11
Labor advisory groups	0	66	0	21	14
Quality circles	28	29	1	36	7
Production teams	32	36	3	10	19
Salarying blue collar workers	67	15	0	1	17
Task forces	34	35	1	11	18
Surveys of employee attitudes	22	47	3	11	17
Financial Incentives					
Piecework	60	17	3	1	19
Group productivity	18	58	2	16	8
Profit sharing	26	47	5	2	21
Stock purchase plans	14	47	15	12	12

1. Numbers may not add to 100% because of rounding.

Percentage of Corporations Reporting Improvement 12 Key Areas of Management Concern (Chapter 7)

Areas of Concern	Total	Employment Size: 500-999	1,000-4,999	5,000-24,999	25,000+	NYSE-Listed	Manufacturing: All	10,000+ Employees	All Non-Manufacturing
Employee attitudes/morale	67%	72%	68%	67%	58%	65%	76%	62%	56%
Costs	56	63	52	55	52	54	63	59	47
Worker productivity	55	56	58	54	53	55	56	54	54
Product quality	54	65	44	59	45	46	71	60	34
Service	53	63	46	57	42	47	54	44	51
Quality-of-work-life	48	59	38	49	45	45	54	44	41
Safety	45	57	37	48	30	39	56	40	32
Overtime	42	50	38	42	31	34	41	37	43
Absenteeism	39	54	30	33	36	32	47	35	31
Turnover	39	46	32	39	42	35	45	36	32
Lateness	38	61	22	31	25	24	47	24	28
Formal grievances	37	49	30	33	27	28	45	32	27

Productivity Gain-Sharing Formulas *(Chapter 8)*

The following material is excerpted from "Productivity Gain-Sharing Plans," a paper prepared especially for the New York Stock Exchange by Professor John Kendrick of George Washington University (see Bibliography).

There are two major types of plans that share the estimated value of productivity gains with employees:

1) Scanlon-type plans, in which the formula is based on financial or "economic productivity" ratios, including the Rucker plan in which labor costs are related to value-added rather than the total value of production; and
2) plans in which physical, or "performance productivity" measures are used in the formula of which *Improshare* is the chief representative, so that gains are calculated in terms of labor-hours saved in a given period relative to a base period.

Joseph Scanlon was a steel worker, cost accountant, United Steel Workers Union official and finally, a lecturer at the Massachusetts Institute of Technology. During the mid-1930s, Scanlon was instrumental in saving the Empire Steel and Tin Plate Company from bankruptcy. He secured greater union-management cooperation in reducing costs, and devised a formula for sharing the cost-savings with all employees to obtain identity of interest between management and labor. Out of this experience Scanlon assisted other firms to apply the principles he had used successfully at Empire.

A similar plan was developed in the late 1940s by Allan W. Rucker of the Eddy-Rucker-Nickels Company in Cambridge, Massachusetts. He had earlier noticed considerable stability in the ratio of payroll costs to value added, and used this as the basis for his formula instead of the ratio of labor costs to the total value of production used in the initial Scanlon plan.

Finally, *Improshare (Improved productivity through sharing)* was developed by an industrial engineer, Mitchell Fein, and first used in 1974. The formula for estimating the productivity gains to be divided between the company and employees differs from the others. It requires estimates of the difference between actual hours worked by covered employees in a given period and those that would have been required at the productivity of a base period. This ties the bonus even more directly to a productivity criterion than the Scanlon and Rucker plans.

Productivity Improvement Obtained In Improshare Companies *(Chapter 9)*

The table below summarizes the percentage gain in productivity for seventy-two companies with Improshare plans. The median gain is approximately 20%. Also, the median gain for companies with production teams is higher than for companies without production teams. Finally, thirty-four of these companies, or slightly more than half, employ unionized workers.

(1) Company	(2) Production Team	(3) Percent Gain After 1 Year
1	no	32
2	yes	70
3	yes	8
4	yes	40
5	no	11
6	no	65
7	no	42
8	no	32
9	yes	15
10	yes	18
11	yes	36
12	yes	16
13	yes	8
14	yes	16
15	yes	15
16	yes	52
17	yes	52
18	yes	32
19	yes	32
20	yes	16
21	yes	8
22	yes	6
23	yes	30
24	yes	7*
25	yes	42
26	yes	16
27	yes	12
28	yes	32
29	yes	10
30	no	10
31	yes	44
32	no	3
33	yes	15
34	yes	18
35	yes	30
36	yes	34
37	no	22
38	yes	18
39	yes	26
40	yes	26
41	yes	16
42	yes	22
43	yes	22
44	no	19
45	no	15
46	yes	70
47	no	16
48	no	20
49	no	31
50	yes	25
51	yes	44
52	yes	75
53	yes	35
54	yes	18
55	yes	55
56	yes	35
57	yes	25
58	yes	55
59	no	0
60	no	28
61	yes	22
62	no	0
63	no	8
64	no	15*
65	yes	9*
66	yes	21*
67	yes	19*
68	no	0
69	yes	10
70	yes	58
71	no	8
72	no	0

Source: Mitchell Fein, 1982.

*First 6 weeks.

Appendix 2

NYSE Survey Methodology

Background

The NYSE survey was conducted among U.S. corporations by the Exchange's Business Research Division during the spring of 1982. The purpose of the survey was threefold: 1) to measure the incidence of human resource productivity programs among U.S. corporations; 2) to estimate the number of employees in those programs as well as the total employed by such companies; and 3) to collect details about the nature of existing programs and the degree of success achieved. The corporate survey frame was constructed from a master list of nearly 65,000 U.S. corporations compiled by Baldwin H. Ward Publications of Petaluma, California. Thomas T. Semon, research consultant in marketing, provided sampling and weighting guidance; Alvin J. Rosenstein, consultant in marketing, moderated focus group sessions. Questionnaire processing and EDP tabulating were the responsibility of Chilton Research Services of Radnor, PA. Additional EDP services and word processing assistance were provided by DSI Data Spectrum, Inc. and WANG Laboratories, Inc., respectively.

Preliminary Research

Besides reviewing available printed material, preliminary research for the study consisted of two focus group sessions and a questionnaire pretest. The focus group sessions were held in New York City and Houston. Twenty individuals representing eighteen major companies in the forefront of the human resource productivity improvement effort contributed their time to help define the study direction.

Based upon information derived from the focus group sessions, a questionnaire was developed, sent to the focus group participants for review, and pretested with a mailing to one hundred randomly selected companies.

Response during pretest was a poor 8%. Follow-up telephone calls indicated that most companies without programs had ignored the questionnaire, because they assumed it was directed to companies with programs. Some questionnaires were never received by the addressees.

To meet the response problem, the quality of the entire mailing was upgraded, primarily by supplying a mail-back postcard to encourage response from companies without programs and by giving a more personalized appearance to the mailing itself. Only minor changes were required in the wording of the questionnaire. As a result of these changes, the response rate more than tripled to 27%.

Corporate and Employee Universes

Before a sample could be selected for the survey, the NYSE Business Research Division first estimated the universe of all U.S. corporations and the total number of employees of this corporate universe.

A primary list of 65,000 U.S. corporations supplied by Baldwin H. Ward was used as the starting point. This list includes only companies which provide financial data to the public. Initially, 2,700 corporations for which employee information was lacking or which had fewer than one hundred employees were removed. A preliminary stratified proportional sample of 5,778 names was then drawn. In addition, a 100% sample of 1,545 corporations comprised exclusively of NYSE listed companies was prepared. All foreign-based companies, nonbusiness corporations and duplicates were removed from both samples. Subsidiaries and divisions were joined with parent companies, causing further reductions. Where appropriate, comparable reductions were made among the 62,300 corporations on the primary list as well.

The number of U.S. corporations with one hundred or more employees was estimated at 49,000, and the total number of individuals employed by those corporations was estimated to be 41,000,000. These estimates were compared against published U.S. Department of Commerce data and deemed acceptably accurate for study purposes.

Separate estimates were made for the universe of companies with 500 employees or more: 7,020 corporations employing 35,000,000 individuals.

Sample Design

A sampling matrix was constructed by distributing all corporations into a ninety-cell matrix based on ten employee size categories and nine SIC categories. Because some cells were extremely small, the sampling matrix was reduced to twenty-five cells. A preliminary sample (already described) of 5,778 names was drawn on an every nth name basis within

cells. Another sample list of 1,545 NYSE corporations was selected on a 1-in-1 basis.

After reductions (see previous discussion), the two samples were combined to yield a total of 6,131 corporate names of which 4,372 were separate, unrelated companies (1,429 NYSE-listed) and 1,759 were related sub-corporations (subsidiaries or divisions).

Weighted Survey Results

Corporate and employee weights were constructed on a cell-by-cell basis using the general formula:

$$\frac{\text{Total Number in Cell}}{\text{Number of Returns in Cell}} = \text{Weight}$$

Because NYSE listed companies were purposely over-represented in the sample, they were given reduced weights to restore proportional balance.

In calculating employee weights, companies which would have exerted inordinate influence in their cells because of large numbers of employees were removed and weighted separately. For the final employee tabulations, the number of employees in each company was multiplied by its employee weight so that each company exerted an influence in proper proportion to its total employees.

The Survey

During March and April of 1982, 6,131 seven-page questionnaires were mailed in several waves. Of this total, 197 or 3.2% were returned as undeliverable. The number of separate companies responding to the study was 1,158, a return of 26.5%.

Individual cell response rates ranged from 13.8% to 42.9%. Because of the low number of responses in some cells, a telephone follow-up was conducted to validate the representativeness of the returns. Out of 158 attempted contacts, 100 calls were completed with nonrespondents principally from low-response cells. Overall, 39.0% of those telephoned reported having a program of the type being measured, a level so close to the 41.0% rate established by the unduplicated respondents, that the survey returns were judged to be representative.

While returns from small companies (fewer than 500 employees) were sufficient to estimate their incidence in the corporate universe, these were insufficient to analyze the programs reported. For this reason, responses from the smaller companies were used to estimate the total number of programs but not to analyze program characteristics.

A copy of the questionnaire used for the NYSE survey is available upon request from the Business Research Division, New York Stock Exchange, 11 Wall Street, New York, NY 10005.

Precision of Results

Results of this survey are precise within certain sampling tolerances. For example, chances are 95 in 100 that the actual proportion of companies with 100 or more employees and a human resource productivity program will not vary from the 13.9% estimate by more than 2.1 percentage points; i.e., the proportion could be as high as 16% or as low as 11.8%. For companies with 500 or more employees, the 32.8% incidence estimated is precise within 4.6 percentage points, and the actual percentage could be as high as 37.4% or as low as 28.2%. For other data in this survey sampling tolerances range from 4 to 12 percentage points. Where program activities are compared with one another, percentage differences of 7 to 17 percentage points are needed to establish statistical significance at the 95% level.

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